DOCUMENT RESUME

ED 156 474 SE 024 426

TITLE	Energy Education Resource Guide.
INSTITUTION	Rhode Island State Dept. of Education, Providence.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	Jan 78
GRANT	NIE-G-76-0055
NOTE	74p.; Contains light and broken type
AVAILABLE FROM	Dissemination Unit, Rhode Island Dept. of Education, 22 Hayes St., Providence, Rhode Island 02908 (no price quoted)
EDRS PRICE	MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS	*Annotated Bibliographies; *Elementary Secondary Education; *Energy; *Energy Conservation; *Instructional Materials; Natural Resources; *Resource Guides
IDENTIFIERS	*Rhode Island

ABSTRACT

To help fill the needs of Rhode Island teachers for useful energy education materials, the Dissemination Services Unit of this state's Department of Education has compiled this resource guide. The entries in this document are available either from ERIC or from the Dissemination Services Unit; Ed numbers are given for ERIC documents. For all entries, a brief description along with the title and author information are given. The publication lists documents that may be of use in general energy education by grade levels: (1) elementary, (2) secondary, and (3) K-12. Selected journal articles are included along with a resources section including films, periodicals, organizations, and Rhode Island Resources entries. The 120-plus documents entered cover many aspects of the energy dilemma including economics, natural resource allocation and use, federal energy policy, nuclear power, and possible solutions to the problems. Some emphasis is given to the energy situation in Rhode Island, but this resource guide should be useful to educators nationwide. (MR)

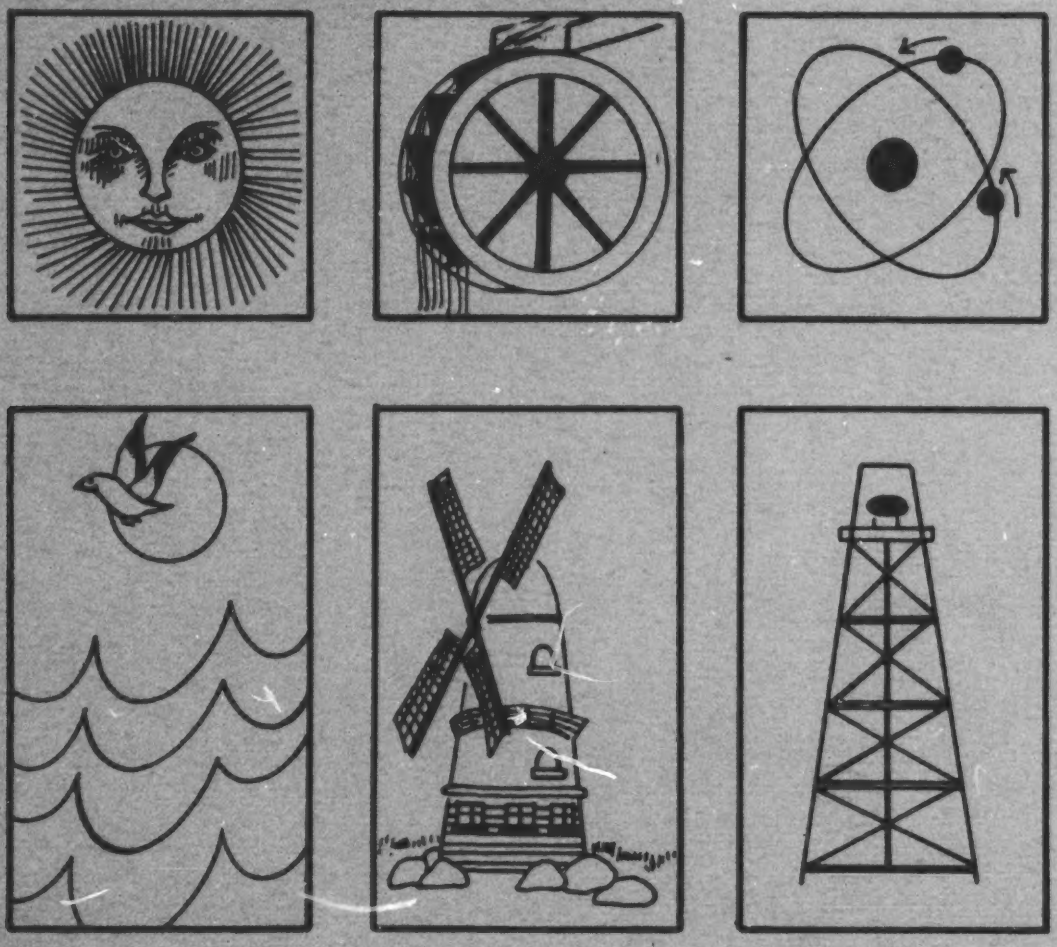
****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED156474

ENERGY EDUCATION

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY



RESOURCE GUIDE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Irene P. Smith

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

2

RHODE ISLAND DEPARTMENT OF EDUCATION ■ DISSEMINATION SERVICES

SE 024 426

ENERGY EDUCATION is one in a series of Resource Guides produced by the Dissemination Services Unit of the Bureau of Technical Assistance. The Guides are updated regularly and are available upon request. Other Guides in the series are:

ADOLESCENT PARENTS

BILINGUAL EDUCATION

COMPETENCY BASED TEACHER EDUCATION

CONSUMER EDUCATION

ENVIRONMENTAL EDUCATION

INDIVIDUALIZED INSTRUCTION

METRIC EDUCATION

NEEDS ASSESSMENT

THE GIFTED AND TALENTED STUDENT

TABLE OF CONTENTS

	Page
INTRODUCTION	i
GENERAL	
ERIC Documents	1
DSU Documents	10
ELEMENTARY	
ERIC Documents	15
DSU Documents	16
SECONDARY	
ERIC Documents	18
DSU Documents	22
K - 12	
ERIC Documents	24
DSU Documents	27
JOURNAL ARTICLES	29
RESOURCES	
Films	35
Recommended Reading	36
Periodicals	38
Organizations	54
Rhode Island Resources	57
ORDER FORM	61

INTRODUCTION

> "Our energy crisis is an invisible crisis, which grows steadily worse--even when it is not in the news. It has taken decades to develop, as our demand for energy has grown much faster than our supply. It will take decades to solve. But we still have time to find answers in a planned, orderly way -- if we define the changes we must make and if we begin now."
> (President Carter's remarks to the American people in his April 29, 1977 message from the White House.)

The energy crisis -- and how to cope with it -- is indeed a serious problem demanding immediate attention. Because of this, and because American education has always been responsive to the needs of its constituents, the educational process must assume responsibilities for disseminating information on energy. Teachers have begun to realize that students, and the community, need information on all aspects of the energy question -- the environmental impact of various energy sources, economic and social implications of the energy crisis, and technological developments.

With this in mind, the Dissemination Services Unit/Education Information Services (EIS) has provided this Resource Guide in ENERGY EDUCATION and a companion Resource Guide in ENVIRONMENTAL EDUCATION, to assist Rhode Island teachers in their task. The Guide is neither exclusive nor inclusive of energy education materials, nor is it an endorsement of any materials. It is one resource for Rhode Island educators.

Most of the documents cited are available from the EIS. An explanation of the citations is on the following page. An order blank is included at the back of the Guide.

Additional copies of this Resource Guide are available from EIS. Please call 277-2035.

January 1978

Preparation of this Resource Guide was financed in part by a Dissemination Capacity Building Grant from the National Institute of Education (NIE-G-76-0055).

Accession number of documents from ERIC. Use to order copies of documents which will be in microfiche format -- (a 4"x6" sheet of film which holds 70-90 pages)

ED 134 445

A COMPOSITE OF ENERGY CURRICULUM GUIDES AND ENRICHMENT MATERIALS. Michael A. Magnoli et al. Mobile County Public Schools, AL 1975. 16 pp. (L)

Indicates document is available in hard copy for a 2-week loan. EIS cannot provide hard copy of ERIC documents.

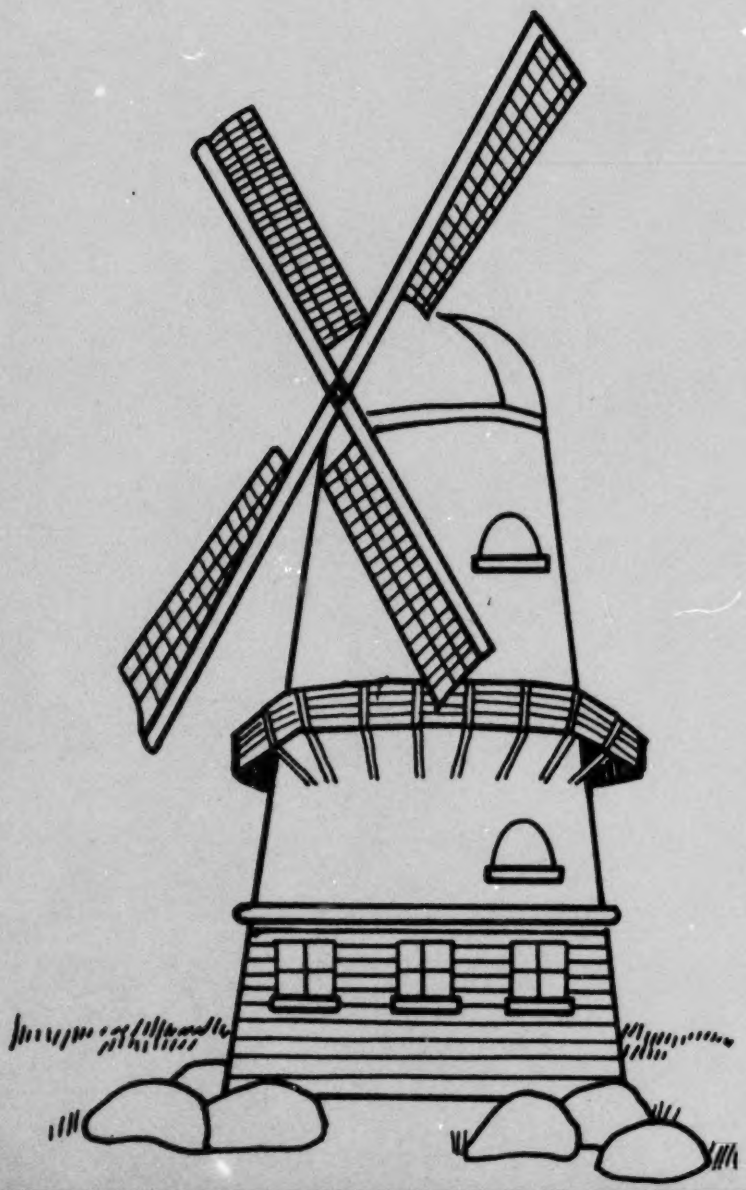
This bibliography was prepared to provide a listing of a variety of curriculum materials, instructional materials, and references related to energy. Each entry includes: (1) Source, (2) Title, and (3) Comments on grade level and price when available. Materials are primarily selected for relevance to grades K-12.

LIVING WITHIN OUR MEANS: ENERGY AND SCARCITY--ENVIRONMENTAL EDUCATION INSTRUCTIONAL ACTIVITIES 7-12. Barry W. Jamason, Coordinator, Environmental Education, New York State Department of Education, Albany. (F)

Indicates availability of citation. Copies of this document are available FREE OF CHARGE as long as the supply lasts.

This publication provides environmental activities which are keyed both to broad envrionmental understandings and to most of the disciplines at the 7-12 grade levels.

Lack of an accession number indicates that document is available from the DSU in either HARD COPY or for TWO-WEEK LOAN.



G E N E R A L

ED 132 024

A NATIONAL PLAN FOR ENERGY RESEARCH, DEVELOPMENT AND DEMONSTRATION: CREATING ENERGY CHOICES FOR THE FUTURE, 1976. VOLUME I: THE PLAN. Energy Research and Development Administration, Washington, DC 1976. 125 pp.

This report presents a plan developed by the Energy Research and Development Administration (ERDA) concerning future energy sources. The plan summarizes ERDA's current views on the energy technologies the U. S. will need to achieve long-term energy independence. The role of the private sector in the development and commercialization of new energy technologies is addressed, and conservation technologies are ranked with supply technologies as the highest priorities for national action.

ED 134 417

ENERGY TRAILS: A GUIDEBOOK DESCRIBING ENERGY SITES, POWER PLANTS, SCIENCE MUSEUMS, AND OTHER INTERESTING PLACES. NORTHEASTERN STATES. VOLUME I. Energy Research and Development Administration. Washington, DC 1976 206 pp.

This is the first in a set of booklets that have been prepared as convenient guidebooks to those major places of interest throughout the United States, that are related to its energy technology achievements. These include historical sites, power production plants, research facilities, and museums. Maps, illustrations, and commentary provide a nationwide energy tour. In this way the traveler may view the past source development concepts of the future. The booklet includes sites from Vermont, Massachusetts, New York, New Jersey, Pennsylvania, Maryland, and the District of Columbia. A Map Key shows the 23 sites described. For each site, there is a local map, site description, and address of whom to contact for additional information.

ED 138 848

SOLAR ENERGY. William W. Eaton. Energy Research & Development Administration, Washington, DC 1976 56 pp.

Described are the origin and nature of geothermal energy. Included is the history of its development as an energy source, technological considerations affecting its development as an energy source, its environmental effects, economic considerations, and future prospects of development in this field. Basic system diagrams of the operation of a geothermal power plan are included.

ED 129 603

THE ECONOMICS OF AMERICA'S ENERGY FUTURE. Henry Simmons. Energy Research and Development Administration, Oak Ridge, TN. 1976 67 pp.

This is an Energy Research and Development Administration (ERDA) pamphlet which reviews economic and technical considerations for the future development of energy sources. Included are sections on petroleum, synthetic fuels, oil shale, nuclear power, geothermal power, and solar energy. Also presented are data pertaining to U. S. energy production and consumption, typical project times to complete development of various types of energy facilities and estimated U. S. energy reserves.

ED 125 849

U. S. ENERGY PROSPECTS: AN ENGINEERING VIEWPOINT. Task Force on Energy. 1974. 149 pp.

With the Arab oil embargo of 1973, the United States became aware of its dependence on foreign fuel to maintain its productive capacity, employment base, political autonomy, strategic security and living standard. An engineering Task Force on Energy was appointed to provide an informed assessment of the realistic strategies that could be initiated if the United States chose to become as independent as possible of foreign sources by 1985, based on technology now known or applicable by that date. This publication presents the analysis, findings, and conclusions of that task force, The task force concludes that the achievement of energy self-sufficiency in one decade would require enormous efforts including voluntary reduction of energy consumption and development of available fuel resources. Central to this report are the roles of government, industry, and the public in advancing a comprehensive energy program in the next decade. Specific considerations discussed in the report include supply and demand, conservation potentials, oil and gas, shale oil, coal supply, and electricity prospects, program constraints and responsibilities beyond 1985.

ED 125 863

CITIZEN ACTION GUIDE TO ENERGY CONSERVATION. Citizens Advisory Committee on Environmental Quality. 1974. 67 pp.

This book is concerned with educating citizen leaders and public officials on matters of transportation energy, industrial and electrical energy, and residential and commercial energy usage. Also included are guidelines on developing a national energy conservation policy and mobilizing citizens for action in energy conservation concerns. A glossary of terms, a short bibliography and a listing of previous energy publications are at the end of the book.

ED 125 885

ENERGY CONSERVATION. UNDERSTANDING AND ACTIVITIES FOR YOUNG PEOPLE. Federal Energy Administration. Washington, DC 1976. 24 pp. (L)

This publication on energy conservation is designed as a resource material for the classroom. It is divided into three chapters concerning a definition of energy, the conservation of energy, and the uses of energy. For each subtopic within the chapters, there is background information and suggested project topics designed for secondary school students. A brief glossary at the end of the booklet defines some of the energy related terms used in the text. A short bibliography and a listing of resource people are included at the end.

ED 132 025

THE ENVIRONMENTAL IMPACT OF ELECTRICAL POWER GENERATION: NUCLEAR AND FOSSIL. Pennsylvania State Department of Education, Harrisburg. 1975. 233 pp.

This text was written to accompany a course concerning the need, environmental costs, and benefits of electrical power generation. It was compiled and written by a committee drawn from educators, health physicists, members of industry and conservation groups, and environmental scientists. Topics include: the increasing need for electrical power, and current and proposed methods for meeting this need; nuclear power and fossil-fueled plants, their wastes, and health effects; considerations for choosing the site for a new power plant; energy conservation; and environmental effects of power generation. The appendices include a glossary of terms, a bibliography for further study, a decision-making model to help the reader and analyze the information received, and a brief outline of the procedure that must be followed by a utility in order to construct and operate a nuclear power plant.

ED 133 196

ENERGY EDUCATION MATERIALS INVENTORY (e.e.m.i.). PART FIVE: REFERENCE SOURCES. Energy and Man's Environment Inc., Portland, OR. September 1976, 42 pp.

This publication is one of a six-part inventory of energy education materials. Included in this part is a listing of bibliographies, computer sources of information, directories, educational programs, funded projects, periodicals, and journals. For each of the materials listed, the following information is included when available: (1) Title; (2) Author; (3) Availability; (4) Cost; (5) Grade Level; (6) Related Materials; and (7) Evaluation of Materials.

ED 129 602

ENERGY FILMS CATALOG. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION. Sid L. Schwartz, Ed. 1976. 82 pp.

This is the first edition of the Energy Research and Development Administration (ERDA) catalog of available motion picture films. One hundred and eighty-eight films, principally relating to energy, are briefly described and classified into three understanding levels. All films are loaned free; complete borrowing instructions and request forms are provided.

ED 093 765

THE ENERGY CRISIS -- AIDS TO STUDY. Margaret McDaniel. Massachusetts Audubon Society. 1974. 25 pp.

Over one hundred citations, the majority of which are current works dating from the seventies, are provided in this annotated bibliography focusing on energy. Entries include books, pamphlets, reports, magazine articles, bibliographies, newsletters, and curriculum materials, such as audiovisual aids, guides and units, and simulations which will be useful in beginning a study of the energy crisis. Multi-disciplinary materials are included. Materials particularly suitable for use at the elementary level are marked with an asterisk, although elementary teachers can find much interesting information in the other citations. The concluding section contains addresses for obtaining the materials cited.

ED 137 075

ENERGY AND ORDER OR IF YOU CAN'T TRUST THE LAW OF CONSERVATION OF ENERGY, WHO CAN YOU TRUST? Mark Terry, Paul Witt. Friends of the Earth Foundation, San Francisco, Calif. 1976. 47 pp.

This instructional program is designed to be used with grade 10 students for 4 to 5 weeks to help students to predict what will happen in a given energy situation. It is designed to lead students to an understanding of their personal energy use, to a realization of the moral nature of the assumptions underlying energy decisions, and to a belief that they can and should participate in decisions affecting their lives. Materials include: (1) Understanding Energy and Order - An Activity; (2) Energy and Order Primer - Presentation; (3) The Nuclear Accident - Presentation; (4) The Automobile Accident - Presentation; (5) The Population Accident - Presentation; (6) Understanding What's on the Bill - An Activity; (7) Understanding What's in the Container - An Activity; (8) The Green Revolution - Presentation; and (9) What's Keeping Us - Presentation.

ED 137 100

IDEAS AND ACTIVITIES FOR TEACHING ENERGY CONSERVATION: Grades 7-12. Jonathan Wert et al. Tennessee University. Knoxville Environment Center. January 1977. 223 pp.

This publication contains a variety of ideas and materials for teaching about energy in grades 7-12. Topic areas include (1) Historical Perspective on Energy; (2) Energy Resources; (3) Energy Conservation; (4) Ideas and Activities; and (5) Appendices. The first three sections provide background information on energy and conservation. The activities include ideas to use in science, social studies, language arts, and multidisciplinary areas. The appendices include a variety of useful tables of data, basic information on energy, a glossary, and a bibliography.

ED 135 637

STAFF HANDBOOK ON NATURAL GAS. H.A. Gorges, Ed. L.P. Raine, Ed. Office of Energy Programs (DOC), Washington, D.C. August 1976. 113 p.

The Department of Commerce created a Natural Gas Action Group early in the fall of 1975 to assist industrial firms and the communities they serve to cope with the effects of potentially severe and crippling curtailment situations. This action group was trained to assess a specific local situation, review the potential for remedial action and alternate energy sources, and to assist in the implementations of remedial action.

ED 139 670

ENERGY: THE SOLAR PROSPECT. WORLDWATCH PAPER 11. Denis Hayes. Worldwatch Institute, Washington, D.C. March 1977. 83 pp.

This paper, one of a series published by the Worldwatch Institute to identify and focus attention on global problems, is adapted from the author's book, "Rays of Hope: The Transition to a Post-Petroleum World." The author examines the current energy problems of the world, and determines that the energy patterns of the past are not the prologue to the future. The inadequacies associated with energy alternatives to petroleum, such as coal and nuclear fusion, are identified and discussed. Thus, society is left with only the solar options; wind, falling water, biomass, and direct sunlight. The historical development, technology, and current status of each of the solar options is detailed. The social and political ramifications of the conversion to a society based on solar energy are hypothesized. The author concludes that the conversion to solar energy is technically feasible, economically sound, and environmentally attractive.

ED 132 026

THE ENVIRONMENTAL IMPACT OF ELECTRICAL POWER GENERATION: NUCLEAR AND FOSSIL. TEACHER'S GUIDE. Pennsylvania State Department of Education, Harrisburg. 1975. 29 pp.

This teacher's guide accompanies a course concerning the need, environmental costs, and benefits of electrical power generation. Each chapter of this guide corresponds to a chapter in the course text, and includes the following: a list of behavioral objectives for the corresponding chapter, list of suggested activities, recommended audio-visual aids, and a list of reference materials. At the end of the teacher's guide is a decision-making model to help the reader analyze the information received. The appendices include laboratory safety rules for working with radioactive substances and an achievement test.

ED 133 172

CREATING ENERGY CHOICES FOR THE FUTURE, A SUMMARY OF THE NATIONAL PLAN FOR ENERGY RESEARCH, DEVELOPMENT AND DEMONSTRATION. Energy Research and Development Administration, Washington, DC 1975 38 pp.

This booklet, which highlights and explains the 1975 National Energy Plan, is intended to improve the general public's understanding of U. S. energy policy. Sections in the publication include: (1) The Energy Problem and the Need for Planning; (2) Basic Principles of the Plan and How They Apply; (3) Overcoming the Oil and Gas Shortage; (4) The Importance of Time; (5) Near-Term: Now-1985; (6) Midterm: 1985-2000; (7) Long

term: Beyond 2000; (8) The Importance of Environmental Research, Development, and Demonstration; (9) The Role of the Federal Government in Energy Development; and (10) New Directions.

ED 133 173

ENERGY AND THE ENVIRONMENT. CITIZENS' WORKSHOP HANDBOOK. Energy Research and Development Administration, Oak Ridge, TN 1975 39 pp.

This publication was produced for the Citizens' Workshop Program on Energy and the Environment. Included in this monograph are sections on: (1) energy and the environment; (2) the energy problem (amount remaining, how it is used); (3) Environmental problems of energy use; an energy-environmental quiz; (4) energy for the future (types, sources, amount available); and (5)sources of further information. The materials emphasize the complexities of the factors involved in energy problems and the need to take positive action toward energy conservation and the development of alternative energy sources.

ED 133 831

ENERGY CONSERVATION: GUIDELINES FOR ACTION, SUGGESTED GUIDELINES FOR LOCAL SCHOOL DISTRICT DEVELOPMENT OF ENERGY CONSERVATION PROGRAMS. Michigan Association of School Administrators, E. Lansing. 1974 58 pp.

Curriculum guidelines for the development of energy conservation programs in public schools reflect an interdisciplinary educational approach--the result of a coordinated effort by industry, commerce, education, and government agencies concerned with the energy crisis. The scope and nature of the problem, with its implications for education and lifestyle, are contained in the opening perspective. Guidelines are suggested for the study of energy conservation, with the goals--broad overarching principles--followed by the objectives--specific types of performances necessary to realize the goals. Brief descriptions of representative activities exemplify districtwide, local school, and nationally developed approaches to energy conservation. A list and description of free or inexpensive instruction materials includes ordering information. Guiding principles for establishing energy conservation programs together with suggested curriculum development procedures at the district, local school, and classroom levels are provided. The appendix contains a summary of the present availability and future prospects of different energy sources.

ED 136 350

ENERGY CONSERVATION. Oregon University, Eugene. ERIC Clearinghouse on Educational Management. 1977.

This chapter of "The Best of the Best of ERIC" contains 14 annotations of documents and journal articles on energy conservation, all of which are indexed in the ERIC system. Materials on teaching energy conservation to students, the energy crisis and its impact on school finances, building heating and cooling, and other topics are annotated.

ED 132 084

ENERGY CRISIS: LIBYA'S AND NIGERIA'S ROLE. RESOURCE PACKET. African-American Institute, New York. School Services Division. 1975. 13 pp.

This resource packet contains practical suggestions and resource materials to help secondary teachers teach about Libya's and Nigeria's roles in the energy crisis. Students become acquainted with the governments and cultures of the two countries, examine their social problems, and learn how the Libyan and Nigerian governments are using money from oil sales to help their people. The classroom materials selected from the packet provide a different point of view--that of the Libyans and Nigerians themselves. The authors want to make students aware that U. S. viewpoints are not always the only or the "right" ones. By using these materials, students will become more critical of their own opinions and more questioning of "facts" as reported in the news media. Students view 16 mm films, read journal articles and books. participate in classroom discussion, write to oil companies, and to independent research. The packet includes (1) two select annotated bibliographies of classroom and teacher materials on Libra and Nigeria, (2) two lesson plans, "The Women of Libya" and "How Does a Government Use its Resources to Bring Maximum Gain to its Citizens?" and (3) suggestions on how to use these resource materials and lesson plans in the classroom.

ED 125 865

ENERGY/ENVIRONMENT OPINIONNAIRE. Tennessee University, Knoxville, 1975. 10 pp.

This questionnaire is designed to assess the opinions of students and teachers of educational institutions and citizens about energy and the environment. It is composed of 85 energy and environment oriented statements about which the examinee gives an opinion. Choices provided on the answer sheet given are strongly agree, mildly agree, not sure, or don't know, mildly disagrees, and strongly disagree. Reproduction of the exam is allowed without permission, though credit is requested. A respondent information sheet is also included.

ED 132 707

ENERGY CONSERVATION GUIDELINES FOR PENNSYLVANIA SCHOOLS. Pennsylvania Department of Education, Harrisburg. 1976 8 pp.

Energy conservation measures that can be effected in the architecture and engineering of new and existing school buildings are listed. Guidelines are also offered for general school operation and maintenance.

ED 123 035

THE HOUSEHOLD ENERGY GAME. Thomas W. Smith, John Jenkins. Wisconsin University, Madison Sea Grant Program. 1800 University Avenue, Madison, Wisconsin 53706. December 1974. 20 pp. (L)

The Household Energy Game has been developed to provide some indication of energy use and individual management. The game is divided into two sections. In the first section, one is to devise one's own energy budget. Energy use is calculated in the areas of transportation, heating, hot water, air conditioning, and appliances. In each of these major categories, factors incluencing that particular energy need are indicated. After selecting figures for one's energy consumption from the accompanying chart, instructions are provided for transferring them to a tally sheet, and then to a grid. To avoid confusion, the various energy units are represented by "squares," Energy "squares" can be translated into dollars. Having devised an energy budget, one can see where one's energy consumption stands in relation to the average American household. Part two is concerned with ways to modify a budget to save energy. Using the tally sheet, points are listed for energy conservation in saving measures given. The revised energy budget can be recorded on the grid. The grid also indicated average American household consumption for 1975 and 1955, and the present world consumption for purposes of comparison with one's budget.

All of the following documents are available in either Hard Copy (HC) or available for a two-week loan (L) from the DSU.

##########

A WORK FORCE FOR ENVIRONMENT AND ENERGY: A MASTER PLAN FOR ENVIRONMENTAL/ENERGY HIGHER EDUCATION IN ILLINOIS. Illinois Board of Higher Education. May 1975.

A plan for environmental and energy higher education in Illinois that is a direct result of a mandate from the Illinois General Assembly, specified in conjunction with the establishment of the Illinois Institute for Environmental Quality.

CONSERVATION DIRECTORY: A LIST OF ORGANIZATIONS, AGENCIES, AND OFFICIALS CONCERNED WITH NATURAL RESOURCE USE AND MANAGEMENT. 20th Edition. Gloria H. Decker. 1975.

Organization s listed in this directory are included on the basis of their stated objectives in relation to conservation of natural resources.

DRIVER EDUCATION? ENVIRONMENTAL/TRANSPORTATION ACTIVITIES. Minnesota Department of Education. 1976.

The Environmental/Transportation Packet consists of eight activities for secondary students. The purpose of the activities is to promote class discussion of environmental/transportation issues through participation in sharing information, personal decisions and values. Each activity has reproducible background information sheets and activity sheets for the student.

ENERGY CHOICES FOR NOW: SAVING, USING, RENEWING - AN INTRODUCTION TO ENERGY IN THE ENVIRONMENT. Educational Challenge, Inc. & The National Education Association. 1974.

This material is an introduction to the topic of energy in the environment. Its audience is the intermediate student as a future citizen who will be involved in making important decisions concerning the vital issue. It is meant to be used in any classroom where the topic of the environment is being studied - social studies, language arts, or science.

ENERGY DILEMMAS. An Overview of U. S. Energy Problems and Issues. League of Women Voters Education Fund. 1977.

A brief, balanced introduction to our energy dilemmas concerned primarily with the political, social and economic issues associated with energy.

ENERGY OPTIONS: EXAMINING SOURCES AND DEFINING GOVERNMENT'S ROLE. League Of Women Voters Education Fund, 1977.

A companion piece to ENERGY DILEMMAS, which provides a conceptual frameowrk to help citizens begin the process of identifying the elements of a realistic U. S. energy policy.

ENERGY: THE CASE FOR CONSERVATION. Dennis Hayes. Worldwatch Institute, Paper No. 4. January 1976.

The fourth in a series of papers published by Worldwatch Institute in an effort to suggest new approaches to current or emerging problems.

CHALLENGES FOR APPALACHIA, ENERGY, ENVIRONMENT AND NATURAL RESOURCES: A HANDBOOK OF REFERENCE MATERIALS. The Appalachia Regional Commission. October 1976.

A 600-page handbook dealing with energy and natural resources as well as the general environment. It includes a series of introductory articles on man and his environment, a "What You Can Do" section, and excellent reference materials and articles under the following topics: Air pollution, energy and manpower, environmental education, environmental planning and land-use planning, mine reclamation, mine safety and healthy natural disasters, solid waste, timber, and water resources and land stabilization. It has a comprehensive bibliography as available resources.

FUELS FROM PLANTS: BIOCONVERSION. John M. Fowler et al.

A factsheet published by the National Science Teachers Association under contract with the U. S. Energy Research and Development Administration.

FACT SHEETS ON ALTERNATIVE ENERGY SOURCES. National Science Teachers Association. Washington, DC

These four-page fact sheets can be obtained free of charge from: NSTA, 1742 Connecticut Avenue, N.W., Washington, DC 20009 Please include stamped, self addressed envelopes.

1. Fuels From Plants (Bioconversion)
2. Fuels From Wastes (Bioconverson)
3. Wind Power
4. Electricity From the Sun I (Solar Photovoltaic Energy)
5. Electricity From the Sun II (Solar Thermal Energy Conversion)
6. Solar Sea Power (Ocean Thermal Energy Conversion)
7. Solar Heating and Cooling
8. Geothermal Energy
9. Energy Conservation: Homes and Buildings
10. Energy Conservation: Industry
11. Energy Conservation: Transportation
12. Conventional Reactors
13. Breeder reactors
14. Nuclear Fusion
15. New Fuels From Coal
16. Energy Storage Technology
17. Alternative Energy Sources: Environmental Impacts
18. Alternative Energy Sources: A Glossary of Terms
19. Alternative Sources: A Bibliography

THE OTHER ENERGY CRISIS: FIREWOOD. Erick P. Eckholm, Worldwatch Paper No. 1. September, 1975.

This is the first in a series of papers issued by the recently established Worldwatch Institute. They are part of an effort by the Institute to identify emerging threats to human well-being and bring them to public attention.

HOT SPOTS, COLD SPOTS. Dennis Laingen. Minnesota State Department of Education. 1972.

The intent of these activities is to make students aware of differences of temperature within a normal room, and to provide them with an opportunity to relate their findings to their personal well being. It is hoped that sutdents will understand how they can modify their activities to live comfortably within their environmental limitations.

ENERGY-ENVIRONMENT SOURCE BOOK. VOLUME I - ENERGY, SOCIETY, AND THE ENVIRONMENT. V. 2 - ENERGY, ITS EXTRACTION, CONVERSION, AND USE. National Science Teachers Association. Washington, DC

An up-to-date, authoritative, and complete treatment of energy issues and problems written for teachers in an informal, easy-to-read style. Contains a wealth of quantitative information, tables, illustrations, and technical appendices.

NEW ENERGY SOURCES: DREAMS AND PROMISES. Marc W. Goldsmith, Energy Research Group, In. Framingham, MA. March 1976.

This paper was developed in order to provide information on energy to the general public, legislators, labor unions, industry and government.

NUCLEAR POWER AND THE ENVIRONMENT--QUESTIONS AND ANSWERS. The American Nuclear Society. April 1976.

A book published to provide the public with useful information and understandable answers to commonly asked questions about nuclear power and the environment.

NUCLEAR POWER: THE FIFTH HORSEMAN. Dennis Hayes. Worldwatch Paper No. 6. May 1976.

This paper evaluates the future of nuclear power, subjecting it to several tests -- those of economics, safety, adequacy of fuel supplies, environmental impact, and both national and international security.

THE NATIONAL ENERGY PLAN: SUMMARY OF PUBLIC PARTICIPATION. Executive Office of the President, Energy Policy and Planning. 1977.

A report to the public of what it has said to the government regarding recommendations for a comprehensive national energy plan.

ENERGY CONSERVATION MATERIALS PACKAGES. Colorado Department of Education Denver. 1975

A series of 5 Step-by-Step guides to developing a district level plan for energy conservation. Topics include: Energy Conservation in School Facilities; District Level Plan for Conservation; Energy Conservation in the School Curriculum; and Energy Conservation in School Transportation Systems.

1976 EXECUTIVE SUMMARY: NATIONAL ENERGY OUTLOOK. Federal Energy Administration.

A concise summary of the National Energy Outlook, published annually by the Federal Energy Administrator. Provides answers to the following questions: What are the Roots of our Energy Problem? How Did We Become so Vulnerable to Oil Imports: How Much Energy Will the Nation Conserve? How Will the Nation Meet Its Growing Energy Demands in 1985?

NEW CRISIS IN THE CLASSROOM: ENERGY." American Educator. September, 1977. Shirley Boes Neill.

Provides a rationale for having the schools assume a leadership role in energy conservation.

THE NATIONAL ENERGY PLAN, Executive Office of the President. Energy Policy and Planning. April, 1977.

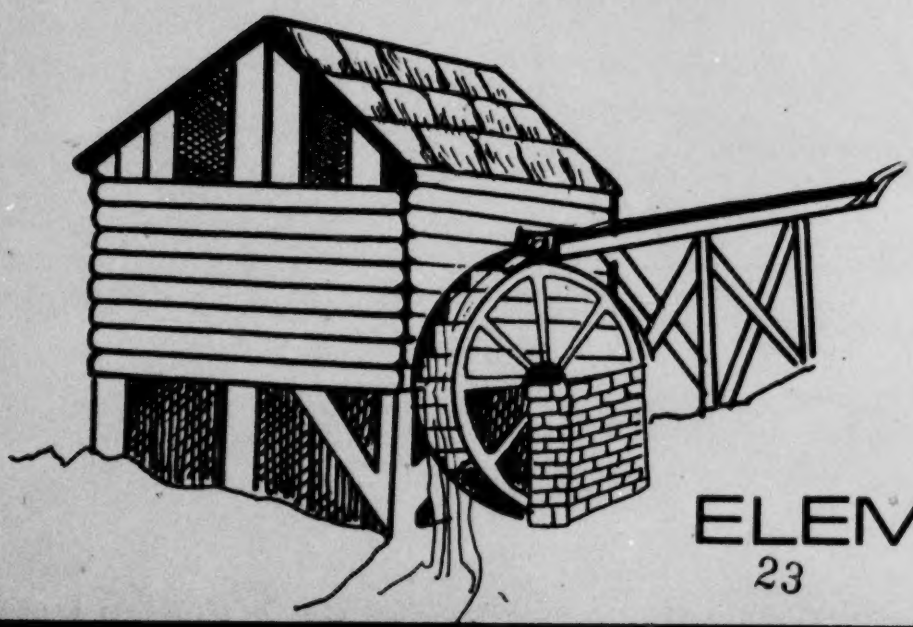
A report on the energy crisis by President Jimmy Carter explaining "why we have to act," and giving the details of his plan.

FORUM: ENERGY MANAGEMENT UP-DATE. Providence College. Cooperative Extension Service, University of Rhode Island. November, 1975.

A complete program of the proceedings of this all day conference.

LIFE, LIBERTY, AND THE PURSUIT OF ENERGY. Save the Bay, Inc., and Rhode Island Committee for the Humanities. July 1976.

A highly informative booklet on Rhode Island's most visible energy alternatives - conservation, oil, nuclear power, solar energy and coal, objectively presented.



ELEMENTARY

ELEMENTARY

ED 127 160

A TEACHER'S INTRODUCTION TO ENERGY AND ENERGY CONSERVATION: ELEMENTARY. Ohio State Department of Education. Columbus. 1975. 93 pp. (L)

This document is intended to give the elementary school teacher background information and general suggestions for teaching units and correlated learning activities related to energy and energy conservation. Sections are directed to: A Problem Shared by All, Causes. What is Energy? Energy Sources, Searching for Solutions. Conservation: An Ethic for Everyone, a glossary, and an extensive bibliography.

ED 130 821

ENVIRONMENTAL EDUCATION, ENERGY, TRANSPORTATION, GRADES K-8. N.J. State Council for Environmental Education. 1975. 55 pp. (L)

The activities in this publication are taken from one of the thirteen units comprising the "Environment and the Quality of Life" series in New Jersey. This book is one of three containing energy-related student activities at various grade levels. The topic of this particular book is energy, transportation. The activities correspond to the number of behavioral objectives and are further grouped according to suitability for pupils in grades K-8. Interdisciplinary in approach, the activities are taken from the subjects of science, art, social studies, mathematics, language arts, English, manual arts, health, and guidance. The book contains some charts and illustrations, as well as a listing of supplementary references.

ED 132 009

HOME SWEET EARTH. Marie Meaney. Highline Public Schools. Seattle, WA. 1976. 43 pp.

The emphasis of the 10 lessons in this unit is on energy, the earth's resources, and the use of earth resources, by man and other living things. The materials are designed for use at grade 1, but could be used in higher grades. Each lesson usually includes the concept of the lesson, materials needed, notes to the teacher, procedure, evaluative activities, and additional suggested activities. The materials were tried and evaluated and evaluation data may be obtained from the Highline Public Schools.

The following documents are available from the DSU in either Hard Copy (HC) or available for two-week loan (L).

#########

COMMUNITY WORKERS AND THE ENERGY THEY USE (GRADE 2), INTERDISCIPLINARY STUDENT/TEACHER MATERIALS ON ENERGY, THE ENVIRONMENT, AND THE ECONOMY. NSTA for ERDA. 1976.

One in a series of classroom materials developed by the National Science Teachers Association for the U. S. Energy Research and Development Administration in an effort to increase public understanding of U. S. Energy Resource potentials and energy technology options.

THE ENERGY CHALLENGE. Federal Energy Administration. Washington, DC.

Developed for students in grades 5 through 8, it is a comprehensive program about our energy past, the concerns of our present energy situation, and the hopes for our energy future. The program consists of 24 spirit duplicating activity masters.

THE ENERGY WE USE (GRADE 1), INTERDISCIPLINARY STUDENT/TEACHER MATERIALS ON ENERGY. NSTA for ERDA. 1976.

One in a series of classroom materials developed by the National Science Teachers Association for the U. S. Energy Research and Development Administration in an effort to increase public understanding of U. S. Energy potentials and energy technology options.

LIVING WITHIN OUR MEANS: ENERGY AND SCARCITY - ENVIRONMENTAL EDUCATION INSTRUCTIONAL ACTIVITIES K-6. Barry Jamason, Coordinator, Environmental Education, New York State Department of Education, Albany. (F)

This publication provides environmental activities which are keyed both to broad environmental understandings AND to most of the disciplines at the K-6 level.

ENERGY IN THE CLASSROOM. VOLUME I. Activity Guide for K-3. Virginia Energy Office. 1975

A source book with a variety of activities and resources available to Virginia teachers for classroom use.

THE ENERGY CRISIS: WHAT YOU CAN DO ABOUT IT. Standard Oil Company (Indiana), Mail Code 3705, 200 East Randolph Drive, Chicago, IL 60601

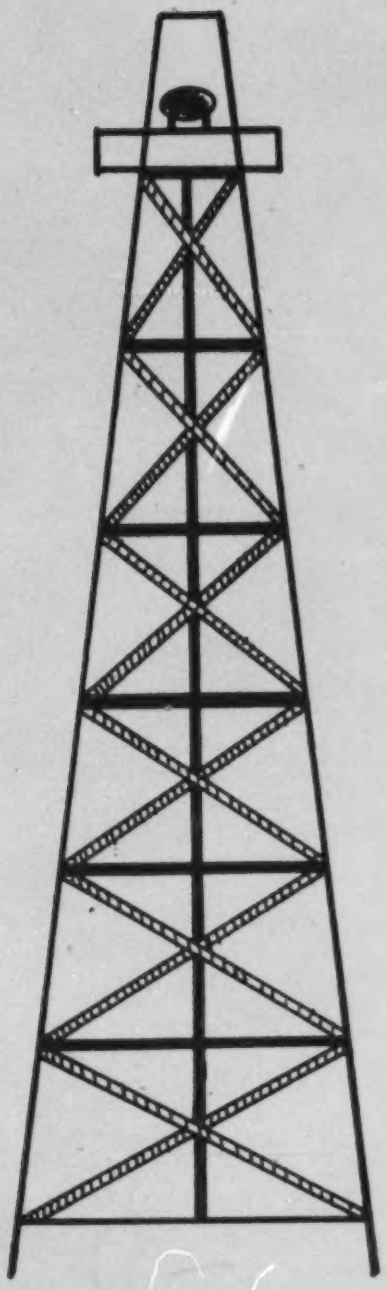
This program was developed to help children understand how they can save energy. It contains four spirit duplicating masters and specific teaching instructions. The first two masters explore the problem of the energy shortage: what is energy and why are we running out of it. Masters 3 and 4 discuss ways we can learn to live with the shortage: by conserving energy and by discovering new sources of it. The masters both provide information and ask for some student interpretation of it.

LIVING WITH ENERGY. Standard Oil Company (Indiana), Mail Code 3705, 200 East Randolph Drive, Chicago IL 60601

This file of our spirit duplicator masters provides a variety of activities for use after viewing the film Living with Energy. (Since this is a self-contained unit, however, it can be used by teachers and students who have not seen the film.) The materials in this file emphasize that Americans can no longer live with energy as we did in the past, that we need to develop new thrift habits in energy spending, and that we need to work together to conserve available fuels and find fresh new energy sources.

INSULATION. Dennis Laingen. Minnesota Department of Education, Minneapolis. 1972.

A complete learning activities packet for envrionmental education for elementary students. The activities expose children to the process of heat exchange and afford them an opportunity to relate their discoveries to the problems of heating and insulating their homes and schools.



SECONDARY

SECONDARY

ED 127 161

A TEACHER'S INTRODUCTION TO ENERGY AND ENERGY CONSERVATION: SECONDARY. Ohio State Department of Education, Columbus. 1975. 97 pp. (L)

This document is intended to give the secondary school teacher background information and general suggestions for teaching units and correlated learning activities related to energy and energy conservation. Sections are directed to: A Problem Shared by All, Causes. What is Energy? Energy Sources, Searching for Solutions. Conservation: An Ethic for Everyone, a glossary, and an extensive bibliography.

ED 133 192

ENERGY EDUCATION MATERIALS INVENTORY (e.e.m.i.). PART ONE: PRINT MATERIALS. Energy and Man's Environment, Inc., Portland, OR. 1976. 102 pp.

This publication is one of a six-part inventory of energy education materials. Included in this part is a listing of print materials, including the following: Teacher's guides, curriculum guides, ditto masters, textbooks, pamphlets, and posters. For each of the materials listed, the following information is included when available: (1) Title; (2) Author; (3) Availability; (4) Costs; (5) Grade level; (6) Related materials; and (7) Evaluation of the materials.

ED 133 193

ENERGY EDUCATION MATERIALS INVENTORY (e.e.m.i.) PART TWO: NON-PRINT MATERIALS. PART ONE. Energy and Man's Environment Inc., Portland, OR. 1976. 75 pp.

This publication is one of a six-part inventory of energy education materials. Included in this part is a listing of non-print materials including the following: films, filmstrips, slides, transparencies, audio-tapes, and records. For each of the materials listed, the following information is included when available: (1) Title; (2) Author; (3) Availability; (4)Cost; (5) Grade Level; (6) Related Materials; (7) Evaluation of the material.

ED 133 194

ENERGY EDUCATION MATERIALS INVENTORY (e.e.m.i.). PART THREE: NON-PRINT MATERIALS, PART TWO: 16 mm Films. Energy and Man's Environment, Inc., Portland, OR September 1976. 66 pp.

This publication is one of a six-part inventory of energy education materials. Included in this part is a listing of 16 mm films. For each of the materials listed, the following information is included when available: (1) Title; (2) Author; (3) Availability; (4) Cost; (5) Grade Level; (6) Related Materials, and (7) Evaluation of the material.

ED 133 195

ENERGY EDUCATION MATERIALS INVENTORY (e.e.m.i.). PART FOUR: KITS, GAMES & MISCELLANEOUS CURRICULA. Energy and Man's Environment, Inc., Portland, OR. September 1976. 25 pp.

This publication is one of a six-part inventory of energy education materials. Included in this part is a listing of kits, games, and miscellaneous curricula. For each of the materials listed the following items are included when available: (1) Title; (2) Author; (3) Availability; (4) Cost; (5) Grade Level; (6) Related Materials; and (7) Evaluation of the materials. Materials listed in this reference include both print and non-print items for teachers and students.

ED 133 162

ENERGY FUTURE. . . Donald Parr. Highline Public Schools, Seattle, WA. 1976. 58 pp.

The unit on energy is designed for junion high school science students. The 11 concepts of the unit have been developed into 11 lessons that should take from two to three weeks to complete. Each lesson includes the concept of the lesson, materials needed, notes to the teacher, procedure, evaluative activities, and suggested additional activities.

ED 099 236

RESOURCES UNIT, EDMONDS SCHOOL DISTRICT. Lynnwood, WA. 1974. 75 pp.

This interdisciplinary program, developed for secondary students, contains 13 natural resource activities that can either be used directly in, or as a supplement to, curriculum in Science, Photography, Mathematics, Social Studies and English. The topics to be investigated include: raindrop impact, resource control, recycling, the world model, elements, water retention, sharing the use of electricity, nuclear power plants, soil fertilizer and pH. Each learning activity includes: subject area and grade level for which it can be used, level VI objectives, time schedule for prelab performance of the activity, background information for the teacher and a listing of materials needed.

ED 129 677

IMPLEMENTING ENERGY EDUCATION IN FLORIDA'S HIGH SCHOOLS: A TWO-WEEK CREDIT INSTITUTE FOR TEACHERS IN NORTH FLORIDA. Final Report, Volume II. Florida State University, Tallahassee. September 1976. 102 pp.

Curriculum units developed by high school teachers are provided for specific content instruction in energy education. Based on group agreement that energy education should assist students in changing attitudes, altering personal behavior and energy consumption, and developing sound alternatives, the units are categorized by social studies, science, and home economics. The social studies units begin with several activities involving energy vocabularly terms. For example, cross-word puzzles and bingo games reinforce definitions. A week-long simulation game based on political decision making creates awareness of energy allocation problems in terms of such issues as litter clean-up and housing developments, and public swimming pools. The science units focus on the technology of biological and physical energy systems. Debates about different types of energy use are encouraged and laboratory projects such as the construction of a solar biogenerator are encouraged. In the home economics units, students learn methods of energy conservation in family life and personal values. Carefully planned house construction, insulation, and use of shrubbery are seen to reduce energy consumption in all seasons. Making hot pads out of a discarded quilt is one of several suggestions for recycling household materials.

ED 133 228

PRIORITY ONE: ENVIRONMENT. THE ENERGY CHALLENGE. Lynne Augis et al. Union Township Board of Education,NJ. 1975 40 pp.

This unit is one of a series in environmental education for grades 1-12. The unit is designed to be used with secondary school students and includes the following sections: (1) Preface; (2) Foods, fuels, and You; (3) Blackout in the City; (4) Conservation and Efficiency; (5) Our Present Sources; (6) The Oil Crisis; (7) The Nuclear Controversy; (8) Tapping New Resources; (9) Developing Other Ways; and (10) Schedule Sheet for the Unit. References to audiovisual aids, worksheets, and activities are made; these materials are not included with the publication, but may be purchased. These materials have been validated as successful, cost-effective and exportable by the standards and the guidelines of the U. S. Office of Education.

ED 130 822

ENVIRONMENTAL EDUCATION, ENERGY - TECHNOLOGY GRADES 7 - 12. New Jersey State Council for Environmental Education. Upper Montclair, New Jersey. 1975. 53 pp. (L)

This publication is one of three books containing energy-related student activities at various grade levels. This particular book is concerned with energy technology. The activities correspond to a number of behavioral objectives and are further grouped according to suitability for pupils in grades 7-9. Interdisciplinary in approach, the activities are taken from the disciplines of science, art, social studies, mathematics, music, language arts, English, and manual arts. The book contains some charts and illustrations, as well as a listing of supplementary references.

ED 133 229

PRIORITY ONE: ENVIRONMENT. THE ENERGY CHALLENGE. TEACHER'S GUIDE. Lynne Augis et al. Union Township Board of Education, NJ. 1975. 32 pp.

Material for this teacher's guide includes: (1) an introduction to the unit; (2) a discussion of the sections of the unit; (3) instructional objectives; (4) suggestions on use of filmstrips, worksheets, reference materials; and activity cards; and (5) an outline of the unit. These materials have been validated as successful, cost-effective, and exportable by the standards and guidelines of the U. S. Office of Education.

ED 132 004

LIVING TODAY WITH AN EYE TOWARD TOMORROW. Lou Wilder. Highline Public Schools, Seattle, WA. 1976 21 pp.

This unit is designed for a ninth-grade Home Economics class. Included are five lessons. Most activities relate to energy use. Each lesson includes the concept of the lesson, materials needed, notes to the teacher, and procedure.

The following documents are available from the DSU in either Hard Copy (HC) or for a two-week loan (L).

#########

AGRICULTURE, ENERGY AND SOCIETY (GRADES 10-11-12), INTERDISCIPLINARY STUDENT/TEACHER MATERIALS ON ENERGY, THE ENVIRONMENT, AND THE ECONOMY. NSTA for ERDA. 1976.

One in a series of classroom materials developed by the National Science Teachers Association for the U. S. Energy Research and Development Administration in an effort to increase public understanding of U. S. Energy Resource potentials and energy technology options.

ENERGY CONSERVATION IN THE HOME, AN ENERGY EDUCATION/CONSERVATION CURRICULUM GUIDE FOR HOME ECONOMICS TEACHERS. University of Tennessee Environment Center and College of Home Economics for ERDA.

A curriculum guide for home economics teachers designed to help students conserve energy in their homes and in their lives.

ENERGY, ENGINES, AND THE INDUSTRIAL REVOLUTION. (GRADES 8-9), INTERDISCIPLINARY STUDENT/TEACHER MATERIALS ON ENERGY, THE ENVIRONMENT AND THE ECONOMY. National Science Teachers Association for the U. S. Energy Research and Development Administration. 1976.

One in a series of classroom materials developed in an effort to increase public understanding of U. S. energy resource potentials and energy technology options.

HOW A BILL BECOMES A LAW TO CONSERVE ENERGY (GRADES 9-11, 12), INTERDISCIPLINARY STUDENT/TEACHER MATERIALS ON ENERGY, THE ENVIRONMENT AND THE ECONOMY.

Another in the series of classroom materials developed by the National Science Teachers Association for U. S. Energy Research and Development Administration in an effort to increase public understanding of U. S. Energy Resource potential and energy technology options.

ENERGY AND ECOLOGY -- ARE YOU INVOLVED? Youth Education, Inc. New York, NY.

This program is designed for use at the secondary level in social studies, economics, science, environmental education, consumer education. home economics, family living, and health education courses. It is intended to give teachers and students a comprehensive up-to-date view of the energy crisis and environmental pollution.

TRANSPORTATION AND THE CITY (GRADES 8-9), INTERDISCIPLINARY STUDENT/TEACHER MATERIALS ON ENERGY, THE ENVIRONMENT, AND THE ECONOMY. NSTA for ERDA. 1976.

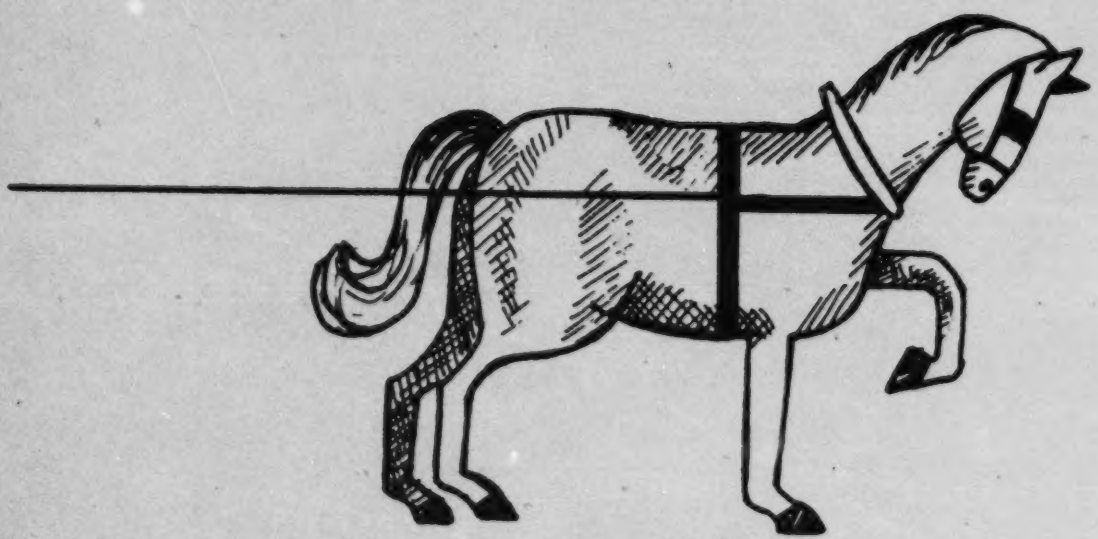
Another in a series of classroom materials developed by the National Science Teachers Association for the U. S. Energy Research and Development Administration in an effort to increase public understanding of U. S. Energy Resource potentials and energy technology options.

LIVING WITHIN OUR MEANS: ENERGY AND SCARCITY -ENVIRONMENTAL EDUCATION INSTRUCTIONAL ACTIVITIES 7-12. Barry W. Jamason. Coordinator, Environmental Education, New York State Department of Education, Albany. (F)

This publication provides environmental activities which are keyed both to broad environmental understandings and to most of the disciplines at the 7-12 grade levels.

USING ELECTRICITY. Dennis Laingen, Minnesota State Department of Education. 1972.

A complete learning activities packet for environmental education for junior high and high school students.



K-12 PROGRAMS

ED 106 070

ENERGY AND MAN'S ENVIRONMENT: ELEMENTARY THROUGH SECONDARY INTERDISCIPLINARY ACTIVITY GUIDE. Thomas F. Ris, editor. Washington Office of the State Superintendent of Public Instruction, Office of Environmental Programs. Seattle, WA. March, 1974. 130 pp.

Energy and its relationship to the environment is the topic of this activity guide. The student activities vary in sophistication and can be used at the different grade levels, K-12. These activities are designed for correlation in the existing school curriculum and have as their objectives the teaching of skills through manipulation of materials and independent study, the shaping of positive environmental attitudes, and the developing of an environmental awareness. Each chapter in the guide concerns a new energy-environment concept and is divided into a number of objectives based on four themes--scientific, ethical, aesthetic, and utilitarian. And finally, a listing of the activities is given.

ED 134 442

ERNIE ERG'S SECOND PRIMER ON THE ECONOMICS OF THE ENERGY CRISIS. Arkansas State Council on Economic Education. Arkansas State Department of Education, Little Rock. Environmental Education Office. 1975 27 pp. (L)

This unit is intended to teach about scarce resources and to relate them to basic economics and energy conservation. The content and activities of the units are introduced through conversation and readings flexible enough for free student expression. The purpose of the study is to provide students with enough information about present and emerging sources of energy to enable them to analyze the problems, make some decisions at their own different levels of ability, and motivate them to become energy conservation activists. The unit is divided into four sessions. Background material is provided for each session and activities are suggested.

ED 123 034

EQUINOX. A MODEL FOR THE ENVIRONMENTAL EDUCATION CURRICULUM FOR KINDERGARTEN THROUGH GRADE TWELVE IN DELAWARE'S SCHOOLS. Thomas M. Baker, et al. State Department of Public Instruction. Dover. 1975. 88 pp.

This publication represents the state model for environmental education for kindergarten through grade twelve in Delaware's schools. The document defines environmental education, lists major curriculum objectives and guidelines, and stresses the importance of the interdisciplinary approach. Four model units, representing the grade level blocks K-3, 4-6, 7-9 and 10-12, have been expanded to demonstrate the conversion of objectives into a program of student learning experiences. Each expansion includes: global objectives, instructional objectives, and suggested activities for the instructional objectives. The model is organized around six major global objectives dealing with energy sources, earth resources, resource reclamation, population dynamics, interdependence and quality of life. Following each global objective is a series of instructional objectives for use in the development of local programs. For each instructional objective, the grade level and subject areas into which it may be infused have been suggested. A bibliography concludes this publication.

ED 130 833

ENERGY ACTIVITIES FOR THE CLASSROOM. Herbert L. Coon et al, eds. ERIC/SMEAC. Columbus, Ohio. 1976. 148 pp. (L)

This sourcebook, designed for use in grades K-12, contains energy teaching activities related to energy resources, production, distribution and use. Each activity has been classified by the editors according to the most appropriate grade level, subject matter, and energy concept involved. Subject areas are science, mathematics, social studies, language arts, and fine arts. This sourcebook draws heavily on ideas and factual materials found at the ERIC Center for Science, Mathematics and Environmental Education. The references cited in specific activities could be useful to persons interested in obtaining more activities and ideas related to energy. Many of the activities are interdisciplinary in nature and were developed or suggested by public school teachers.

ED 133 899

A MODEL FOR EDUCATION: ENERGY-WATER CONSUMPTION DECISION MAKING. Ralph L. Bontrager et al. February 1977. 33 pp.

Public schools are in a position to convince society-at-large of the national energy problem. There is a direct relationship between energy costs to the schools and the type of educational programs they can provide. While waiting ro a national energy policy with a section devoted to schools, districts can calculate the amount and cost of energy per pupil by utilizing utilities records, enrollment and attendance figures, and building measurements. A number of energy-saving techniques are outlined. A model of a district-wide energy conservation plan is presented. Appendixes contain a bibliography and examples of procedures followed in the plan.

ED 133 918

THE CONSERVATION OF ENERGY IN SCHOOLS--A FEASIBILITY REPORT. Fred D. Whitworth. Canadian School Trustees Association, Ottawa. March 1976. 51 pp.

This report is concerned with suggestions for translationg changing educational requirements and community needs into appropriate schools facilities that are designed, or changed, to be cost beneficial and to conserve energy. Planning guides are offered for the construction and the improvement of elementary and secondary schools. Some preventative maintenance procedures and heat recovery methods are noted. The report also looks at alternative ways of heating and cooling but particularly at solar heating andheat pumps. Some figures from limited studies given to indicate energy savings that various modifications could be reasonably expected to offer. The uses of building system and windmills are also examined.

ED 134 445

A COMPOSITE OF ENERGY CURRICULUM GUIDES AND ENRICHMENT MATERIALS. Michael A Magnoli et al.. Mobile County Public Schools, AL 1975 16 pp.(L)

This bibliography was prepared to provide a listing of a variety of curriculum materials, instructional materials, and references related to energy. Each entry includes: (1) Source, (2) Title, and (3) Comments on grade level and price when available. Materials are primarily selected for relevance to grades K-12.

The following documents are available from the DSU in either Hard Copy (HC) or for a two-week loan (L)

##########

ENERGY ENVIRONMENT SOURCE BOOK. VOLUME 1., ENERGY, SOCIETY AND THE ENVIRONMENT: VOLUME 2., ENERGY, ITS EXTRACTION, CONVERSION AND USE. John W. Fowler. National Science Teachers Association. 1975.

An excellent source book for teachers who wish to incorporate materials on the complex subject of energy into their teaching.

ENERGY-ENVIRONMENT MINI-UNIT GUIDE. Stephen M. Smith, et al, editors. National Science Teachers Association. 1975.

This guide is a collection of seven mini-units that provides materials for science and social studies teachers in grades K-12. A mini-unit is a series of plans for lessons which focus on several related energy-environment concepts, relationships, and student objectives. The core of each mini-unit is a group of teaching suggestions that describe in detail the purpose of a lesson, the main tasks for the teacher, and suggested student-teacher interactions.

ENVIRONMENTAL EDUCATION ACTIVITY MANUAL. Division of Curriculum Development and Pupil Personnel Services. Office of Instructional Services. Georgia Department of Education. Atlanta, Georgia. 30334. 1976.

This is a resource guide of activities organized according to the following sections: Activities for the Classroom, Activities for the School Site, and Activities for Field Study. Suggested grade level is included with many of the activities.

ENERGY AND WATER CONSERVATION SUGGESTIONS FOR CALIFORNIA'S ELEMENTARY AND SECONDARY SCHOOLS. California State Department of Education, Sacramento. 1977.

The results of an effort within the California State Department of Education to provide school districts with the information and help they need to develop meaningful conservation programs and practices.

ENCOUNTERS IN ENVIRONMENTAL EDUCATION. Arlyn A. Klein. Mankato State College. Kendall/Hunt Publishing Company. Dubuque, IA. 1974.

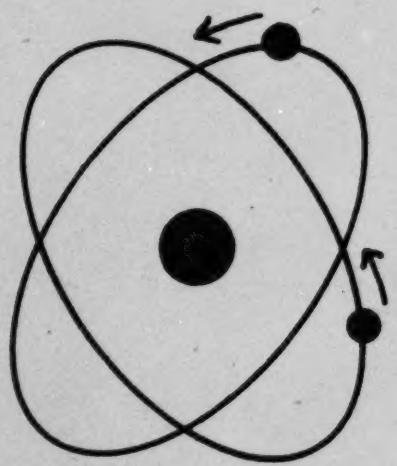
Encounters in Environmental Education is divided into eleven categories. Each category relates to some aspect of the student's environment ranging from "self" to the physical world around him. In an effort to help students and teachers to more easily find a desirable activity, each category begins with a listing of all activities in order of their appearance. Teachers will find that the activities will rarely need any special equipment or materials.

TEACHER'S RESOURCE GUIDE FOR ENVIRONMENTAL EDUCATION. Arizona Department of Education. 1976.

The most recent edition of Arizona's collection of classroom and teaching activities for teachers K through 12, geared towards providing a basis for developing a sound environmental ethic among today's youth. This guide is divided into seven major sections, each representing one of the following fundamental natural resources: (1) soil, (2) air, (3) water - from which the other resources are formed, (4) vegetation, (5) wildlife - the living resources, (6) minerals -- the essential nonrenewable resources, and (7) man.

THE ENERGY BOOK. South Carolina Department of Education. 1977.

The purpose of this document is to provide teachers with a sampling of activities that can be used with individuals, small groups, or large classes to increase awareness to the total energy situations and to encourage a commitment to conservation. This is not an organized unit of study. It is simply a list of ideas, gathered from many sources, which teachers may use to fit their own teaching style and class structure.



JOURNAL ARTICLES

JOURNAL ARTICLES

Energy

"Energy Teaching Centers." Lois E. Kenick. THE SCIENCE TEACHER. May 1976. pp 34-35.

Author discusses Energy Teaching Centers for students, parents and homeowners and teachers.

"A Teacher's Guide to the Energy Crisis." Joyce G. Sartwell et al. TODAY'S EDUCATION. January/February 1975. pp 90-97.

Article defines some troublesome facts about the use of energy, organizes the major issues, reviews some alternative sources of energy, provides some ideas for classroom use, and lists a reference and materials bibliography.

"Energy Consumers Turn into Conservationists." NATION'S SCHOOLS. April 1974. pp. 26-28

Describes a week of energy conservation classroom activities.

"How To Find Benefits in the Energy Crisis." John L. Baird. COMPACT. March/April 1974. pp. 21-22.

The potential difficulties posed by the energy crisis could be turned into some real benefits for education.

"The Energy Crisis." Theodore Weaver. TODAY'S EDUCATION. January/February 1974. pp. 44-49

The author discusses our need to find acceptable compromises to the energy crisis.

"Coping With the Energy Crisis: Four Experts Talk It Over." NATION'S SCHOOLS. January 1974. pp. 33-38.

An educator, an energy consultant, an architect, and a superintendent of facilities planning, discuss the energy crisis in relation to education.

"Should the Fuel Crisis Mean a School Crisis?" Doris Ross. COMPACT. January/February 1974. pp. 3-6.

Discusses the results of a nationwide survey conducted by the Education of the States on the concerns of educators about the every crisis, and suggests that schools be given top priority in fuel allocations.

"How To Help Your Schools Cope with the Energy Crisis." AMERICAN SCHOOL BOARD JOURNAL. January 1974. PP. 30-34; 43-47; 59

A special report by Philip G. Jones, Assistant Editor, has provided some answers to the problem. Other contributors to the section are: Louis M. Kohlmeier and Ed Stephan.

"Energy is Elementary." Helen H. Carey. SCIENCE AND CHILDREN. May 1977. pp. 23-24.

Encourages elementary school teachers to develop energy education materials; describing the initial phases of a National Science Teachers Association (NSTA) sponsored project in energy education. Two learning packets, The Energy We Use (Grade 1) and Community Workers and the Energy They Use (Grade 2), are described. Mailing list information included.

"The Energy Crisis: A Creative Approach." Alison Murphy et al. SCIENCE AND CHILDREN. April 1977. pp. 9-11.

Describes a school project on energy conservation, in which fifth and sixth grade students involved the town community in becoming aware of the extent of the energy shortage and considering modes of cutting down on energy usage. Included are ideas for projects and science fairs.

"More Space Than You Need? What to Do With It--and Same Some Energy, Too." AMERICAN SCHOOL BOARD JOURNAL. May 1977. pp. 34-35.

The article offers suggestions for exploiting excess space by making do with what we have, and restoring rather than wrecking school buildings.

"Beating the High Cost of Energy in Schools--Why It Must Be Done, and How To Do It." Manfred Moses. AMERICAN SCHOOL BOARD JOURNAL. April 1977. pp. 28-30.

Outlines the steps school systems must take in order to accomplish a total energy reduction, conservation and management program in schools.

"Association News: An Energy-Rich Curriculum--Help Us Evaluate It." John M. Fowler. SCIENCE TEACHER. December 1976. pp. 13-14.

Described are six interdisci;linary energy instructional packets developed by the National Science Teachers Association. Packets are designed to complement existing curricula and include topics for elementary and secondary levels.

"Energetic Lessons on Energy." Terry Solana. ARITHMETIC TEACHER. December 1976. pp. 639-641.

Mathematical activities are described which focus on cars and gasoline consumption.

"Four Ways to Get Ready for the Big Energy Troubles that Loom for Schools." AMERICAN SCHOOL BOARD JOURNAL. January 1977. pp. 32-33.

This article suggests procedures for determining (1) how to figure out how much energy your schools use; (2) how to make Mother Nature work for you; (3) how good maintenance will save energy, and (4) how to prepare for the worst.

"Energy for Today and Tomorrow with Energy Eagle." Melanie B. Messer. SCIENCE AND CHILDREN. November/December 1976. pp. 18-19; 28.

Described is an energy awareness module utilized, in the San Diego (California) county schools, to make students more aware of energy use in the local community. Activities include an energy game and energy walks in the school and the community.

"Rural Elementary Children's Attitudes Toward the Energy Crisis." Jerry B. Ayers. SCHOOL SCIENCE AND MATHEMATICS. March 1976. pp. 238-240.

Reports on the results of a survey of the attitudes of rural fifth through seventh grade students toward the energy crisis. Among results, it was found that children at this age level appeared to understand some of the problems and implications of electricity generation from fossil and nuclear fuels, and that overall, older children and females were more cautious in their views concerning the generation of electricity.

"Improving the Quality of Life Through Better Use of Energy and Resources." John R. Sheaffer. JOURNAL OF ENVIRONMENTAL EDUCATION. 1975. pp. 1-10.

Environmental education can provide information for better management of energy and resources. It must make people aware of society's abilities to find solutions to environmental problems. This requires presenting the dynamics of ecological principles and emphasizing environmental values and attitudes as well.

"Energy, Education, and the "Wolf" Criers." John M. Fowler. SOCIAL EDUCATION. April 1976. pp. 245-56.

This article examines the background to the current energy crisis and outlines some possible solutions to the problem.

"Energy, Education and the "Wolf" Criers." John M. Fowler. SCIENCE TEACHER. March 1976. pp. 25-32.

Surveys the energy situation in terms of current demands and resources. Explains proposals contained in the Federal Energy Research and Development Administration (ERDA) plan for utilization of future sources of energy. The role of science teachers concerning energy education is discussed with suggestions for possible topics and instructional materials.

"The Energy Crisis: A Continuing Disaster." David Savage. PHI DELTA KAPPAN. December 1976. p. 353.

To school business managers, the energy crisis is a continuting economic disaster as energy costs continue to climb and schools are without money to make necessary renovations to reduce energy consumption.

"Teaching About the Nuclear Power Controversy by Simulation." Thomas Tanner. SOCIAL EDUCATION. Nov/Dec. 1976. pp. 588-9.

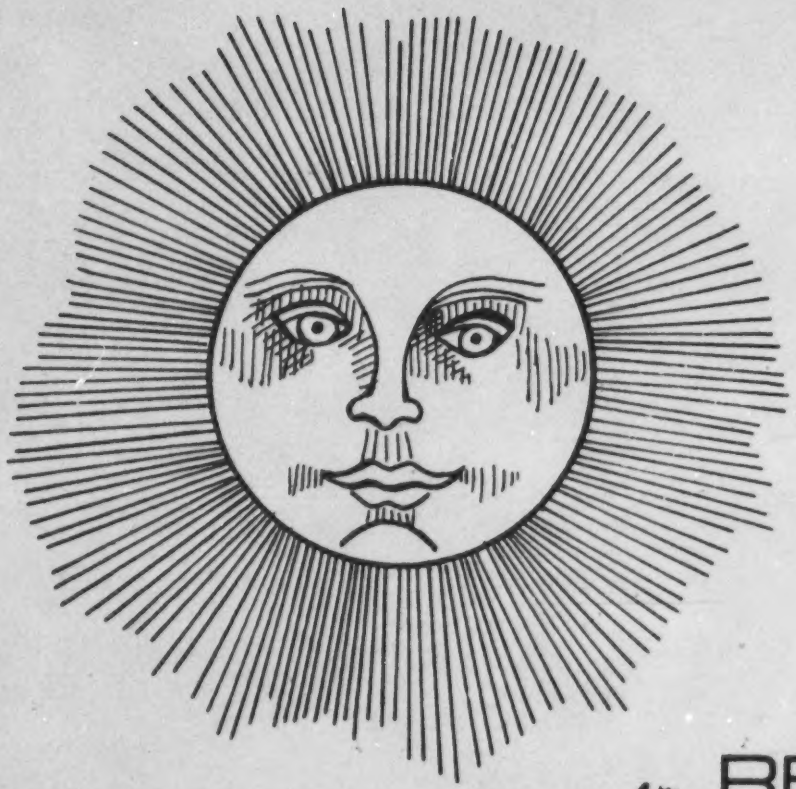
Describes a simple simulation for teaching secondary students about nuclear power as a source of energy by having them role play various interest groups. Game rules, including division of class members into four interest groups, are described. The author suggests eight references that would be useful for the simulation.

"Energy Teaching Centers--One Good Way to Explore Alternatives." Lois E. Kenick. SCIENCE TEACHER. May 1976.

Proposed the development of community centers in which school children, parents, and homeowners can be educated in areas of energy conservation and alternative fuel sources. Provides brief passages on some of the most promising alternative fuels.

"Science/Society Case Study--Net Energy: Figuring the True Yield." John W. Moore, Ed.; Elizabeth A. Moore, Ed. SCIENCE TEACHER. April 1976. pp. 24-25.

Describes the use of the net energy concept in the classroom as well as its influence on technology.



The following filmstrip/record presentation is available for a two-week loan from the DSU.

##########

ENERGY CRISIS: WHAT WE CAN DO. The Alliance for Environmental Education. 1785 Massachusetts Avenue. Washington, DC. 20036

The two filmstrips include three areas of energy study. The first section discusses the validity of the shortage; the second part examines energy conservation measures and illustrates the vast amount of oil that can be saved when conservation practices are in use. The third part is an introduction to energy economics. These filmstrips are suitable for junior and senior high school students and for use in adult education.

THE ECONOMICS OF THE ENERGY PROBLEM. Produced by Teaching Resources Films, An Educational Service of the New York Times, in cooperation with the Joint Council on Economic Education. 1976.

A filmstrip and teacher's guide which describes our daily energy use, energy shortages and how these shortages affect our economy.

CURRENT, CLASSIC AND CHOICE*
Recommended Reading

E N E R G Y

ENERGY AND MAN. Timothy J. Healy. Boyd & Fraser Publishing Company, 3627 Sacramento Street, San Francisco, CA 94118, 1975. $6.95.

THE ENERGY BALLOON. Steward Udall. McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020. 1974. $7.95

ENERGY FOR MAN. Hans Thirring. Greenwood Press, Inc., 51 Riverside Avenue, Westport, CT 1968. $17.25.

ENERGY FOR SURVIVAL. Wilson Clark. Anchor Books, Imprint of Doubleday and Company, Inc., 501 Franklin Avenue, Garden City, NY 11530 1974. $4.95

ENERGY PRIMER. Tom Gage & Richard Merrill. Portola Institute, The Book Organization, Elm Street, Millerton, NY 12546 1975, $4.50

ENERGY: THE NEW ERA. David Freeman. Random House, Inc., 457 Hahn Road, Westminster, MD 21157 1974. $2.45

ENERGY: TRANSACTONS IN TIME. Kaiser News, 1970. (Five copies may be ordered at 50 cents for each from: Kaiser News, 300 Lakeside Drive, Oakland, CA 94643). For multiple copies: Benziger, Bruce and Blencoe, Marketing Department, 8701 Wilshire Boulevard, Beverly Hills, CA 90211

EXPLORING ENERGY CHOICES. Ford Foundation's Energy Policy Project. Ballinger Publishing Company, 17 Dunster Street, Harvard Square, Cambridge, MA 02138 1974. 75 cents.

A NATIONAL PLAN FOR ENERGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION Energy Research and Development Administration - ERDA-48. Government Printing Office, 17 North Capitol Street, Washington, DC 20402. Free

NON-NUCLEAR FUTURES: THE CASE FOR AN ETHICAL ENERGY STRATEGY. Amory Lovins & David Brower. Friends of the Earth, 529 Commercial St., San Francisco, CA 94111 1975. $4.95.

*Taken from; CHALLENGES FOR APPALACHIA ENERGY, ENVIRONMENT AND NATURAL RESOURCES. A handbook of reference materials prepared by the Staff of The Appalachian Regional Commission. October 1976. pp. 553-570 Reprinted with permission.

THE NUCLEAR CONTROVERSY. Ralph Lapp. Fact Systems, Inc., 537 Steamboat Road, Greenwich, CT 06830 1975. $7.95

A TIME TO CHOOSE: AMERICA'S ENERGY FUTURE. Ford Foundation's Energy Policy Project. Ballinger Publishing Company, 17 Dunster Street, Harvard Square, Cambridge, MA 02138. 1974. 75 cents.

ENERGY, ECOLOGY AND THE ENVIRONMENT. Richard Wilson. Academic Press, Harcourt Brace Jovanovich, Inc., 111 Fifth Avenue, New York, NY 10003 1975. $5.95

ENERGY AND THE ENVIRONMENT. John M. Fowler. McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020 1975. $7.95 (Instructor's Manual: $2.95)

PERIODICALS THAT DEAL CHIEFLY WITH ENVIRONMENTAL PROBLEMS AND RESEARCH*

AIR AND WATER NEWS. 801-7 New Center Building, Detroit, MI 48202

A weekly report concerning environmental pollution and its relationship to the law, the market, and technology. Very expensive.

AIR/WATER POLLUTION REPORT. Business Publications, Box 1067, Blair Station, Silver Spring, MD 20910

A weekly newsletter on waste disposal, soil pollution, desalination, noise, and conservation. Very expensive.

ARCHIVES OF ENVIRONMENTAL HEALTH. Heldref Publications, 4000 Albermarle Street, N.W. Washington, DC 20016

Scholarly presentation for the professional in environmental health a good research tool for those in allied fields as well. (Monthly)

ATMOSPHERIC ENVIRONMENT. Pergamon Press Limited, Headington Hill Hall, Oxford OX3 OBW, England.

Papers dealing with all aspects of air pollution research, such as emission control, pollutant transport, crop spraying, and industrial aero-dynamics are featured. (Monthly)

CATALYST FOR ENVIRONMENTAL QUALITY. 274 Madison Avenue, New York, NY 10016.

A popular treatment of all aspects of the environment. Includes reviews of books and films useful in environmental education. (Quarterly)

COMPOST SCIENCE: THE JOURNAL OF WASTE RECYCLING. 33 E. Minor Street, Emmause, PA 18049.

This publication provides scientific and practical information concerning the converson of municipal, agricultural, and industrial wastes into useful products. (Bimonthly)

*Taken from: THE JOURNAL OF ENVIRONMENTAL EDUCATION, Spring 1976, (Volume 7, Number 3). "The Environmental Press" by James and Eileen Metress. Reprinted with permission.

THE CONSERVATION FOUNDATION LETTER. 1717 Massachusetts Avenue, N.W., Washington, DC 20036

Contains up-to-date news on environmental issues, including federal budget appropriations, legislative action, land use, water, soil, noise pollution, etc. (Monthly)

CONSERVATION NEWS. National Wildlife Federation. 1412 16th Street, N.W. Washington, DC 20036.

Presents current coverage of recent and pending federal legislation regarding conservation. Junior high to adult level. (Semimonthly).

DESIGN AND ENVIRONMENT. RC Publications, 19 West 44 Street, New York, NY 10036

A journal devoted to a consideration of the interaction between technology and environment with emphasis on how the interaction can be made constructive. (Quarterly).

ECOLOGICAL ABSTRACTS. Geo Abstracts, Ltd., University of East Anglia, Norwich, Nr4, TTJ, England.

An abstracting service that publishes abstracts of original contributions to the literature in all fields of ecology. The sections dealing with applied ecology are of particular relevance to environmentalists. (Bimonthly with an annual index).

ECOLOGICAL MONOGRAPHS, Duke University Press. Box 6697. Durham, NC 27708.

A very scholarly publication that presents research papers dealing with all aspects of ecology and the development of ecological theory. Along with ECOLOGY, it is an official organ of the Ecological Society of America; it differs from ECOLOGY in that it concentrates on longer research papers of twenty pages or more. Technical. (Quarterly)

THE ECOLOGIST. Molesworth Street, Wadderbridge-Cornwall, England.

A monthly magazine featuring ecological articles ranging in scope from primitive man in the modern world, to wildlife and resource management and public health. Printed on recycled paper. (Monthly)

ECOLOGY. Duke University Press. Durham, NC 27708

A companion to ECOLOGICAL MONOGRAPHS from the Ecological Society of America. Stresses research on basic problems of any orgamism in relation to its environment and concentrates on papers of less than 20 pages. Quite technical. (Bimonthly)

EKISTICS. Athens Center for Ekistics, 24 Strat Syndesmou Street, Athens, 36, Greece.

A periodical dealing with the problems and planning of human settlements for the future. (Monthly)

ENVIRONMENT. Scientist's Institute for Public Information. 560 Trinity Avenue, St. Louis, MO 63130

Publishes current articles and news concerning the effect of technology on the environment. An excellent popular magazine to keep one abreast of the information explosion in environmental science. (10 times/year)

ENVIRONMENTAL ACTION. Room 731, 1346 Connecticut Avenue, NW Washington, DC 20036

A periodical put out by Environmental Action, Inc., a political lobby formed to focus attention on the environmental crisis. Presents all aspects of ongoing environmental controversies. (Biweekly)

ENVIRONMENTAL ACTION BULLETIN. 33 East Minor Street, Emmaus, PA 18449

A grassroots-type publication that provides valuable information on the latest developments in the field and tips on how and where to take the fight to protect the environment. should be read with some reserve. (Biweekly)

ENVIRONMENTAL AFFAIRS. The Environmental Law Center, Boston College Law School, Brighton, MA 02135

A multidisciplinary journal attempting to expose environmental degradation to all in a belief that scholarly isolation of such affairs will end in disaster. (Quarterly)

ENVIRONMENTAL EDUCATION REPORT. Environmental Educators, Inc. 1621 Connecticut Avenue, N.W., Washington, DC 20009

A publication dealing with the various components of environmental education. Features articles, book reviews, film reviews, congressional updates, international news, granting sources, and a calendar of coming events related to environmental education. (Monthly)

ENVIRONMENTAL INFORMATION ACCESS, Environmental Center, Inc. 124 East 39 Street, New York

A comprehensive compilation of environmental abstracts. An expensive but basic bibliographic tool. (Biweekly)

ENVIRONMENTAL POLLUTION. Applied Science Publ. Ltd. Ripple Road, Barking, Essex, England.

Deals with biological effects of pollution control and with the international, economic, and political aspects of pollution problems. (Quarterly)

ENVIRONMENTAL RESEARCH. Academic Press, Inc. 111 Fifth Avenue, New York, NY. 10003

An international journal of environmental medicine and environmental biology that emphasizes research concerning the health effects of environmental modifications. The relevance of the research to broad problems of the environment is considered. (Quarterly)

ENVIRONMENTAL REPORT. Trends Publishing Company. National Press Bldg. Washington, DC 20004

Short reports on environmental situations and research. Sections on selected publications, environmental trends, conferences and research projects, and an environmental booklist. An expensive but excellent source of material. (Two times/month)

ENVIRONMENT AND BEHAVIOR. Russell Sage Foundation Press, 275 South Beverly Drive, Beverly Hills, CA 90212

Articles dealing with experimental and theoretical studies on the influence of the physical environment on human behavior.

ENVIRONMENT AND PLANNING. Pion Limited, 207 Brondesbury Park, London, NW2, England.

This publication presents an interdisciplinary approach to the trends and problems encountered in environmental research and city and regional planning. Also included are book reviews and reviews of important papers published elsewhere.

ENVIRONMENT NEWS DIGEST. 250 Park Avenue, New York, NY 10017

A very brief coverage of selected environmental news items and tips for action on environmental issues. Easy reading and free on request. (5 times/year)

ENVIRONMENTAL REPORTER. Bureau of National Affairs, Inc. 1231 25th Street, NW, Washirgton, DC 20037

A weekly periodical that reviews developments in the field of pollution control such as conferences, speeches, reports, and legislation. (Weekly)

ENVIRONMENTAL SCIENCE AND TECHNOLOGY. American Chemical Society, 1155 16th Street, NW, Washingon, DC 20036

Provides monthly information on the research and technology of water, air, and waste chemistry and news of the political and industrial aspects of environmental management. (Monthly)

ENVIRONMENTAL SPECTRUM. Co-op Extension Service, Rutgers University, New Brunswick, NJ 08903

A short newsletter issued regularly that includes information on conferences, meetings, short courses and other happenings that relate to environmental science.

INTERNATIONAL JOURNAL OF ENVIRONMENTAL STUDIES. Gordon and Breach Science Publishers, One Park Avenue, New York, NY 10016

A journal for social, natural, and applied scientists as well as planners and architects that carries news comments, book reviews, and articles on almost any field of environmental science. (Bimonthly)

JOURNAL OF AIR POLLUTION CONTROL ASSOCIATION. 4400 Fifth Avenue, Pittsburgh, PA 15213.

This journal directs itself specifically to problems of air pollution. Features technical papers as well as air pollution news and legislation. (Monthly)

JOURNAL OF APPLIED ECOLOGY. British Ecological Society, Blackwells Ltd., 5 Alfred Street, Oxford, England.

Scholarly journal that presents articles that deal with environmental management but stresses the relations between plants and anthropods important for agriculture. (Quarterly)

JOURNAL OF ECOLOGY. British Ecological Scoiety, Blackwells Ltd., 5 Alfred Street, Oxford, England.

The official publication of the British Ecological Society. Its emphasis leans toward plant ecology and plant-animal relationships. Technical. (Quarterly)

JOURNAL OF ENVIRONMENTAL EDUCATION. Heldref Publications, 400 Albermarle Street, NW, Wasnington, DC 20016

A journal concentrating on research and development in the communication aspects of conservation and environmental education with the aim of producing a citizenry with a more adequate knowledge of our environment and the problems associated with its manipulation. (Quarterly)

POPULATION BULLETIN. Population Reference Bureau. 1755 Massachusetts Avenue, NW, Washington, DC 20036

A semi-popular periodical put out by the Population Reference Bureau that presents topics on the population explosion and the environmental consequences of controlled population growth. (Bimonthly)

REMOTE SENSING OF ENVIRONMENT. American Elsevier Publications, 52 Vanderbilt Avenue, New York, NY 10017

A technical publication with a great number of brief articles on the use of remote sensing techniques for environmental study and management. (Four issues/Volume)

RESOURCES. Resources for the Future. 1755 Massachusetts Avenue, NW Washington, DC 20036.

Presents special topics on resource use and development but tends to be rather pro-industry. Also, presents a yearly review of highlights in the field. (3 times/year)

SOLID WASTE MANAGEMENT. Communications Channels, INc. 461 Eighth Avenue, New York, NY 10001

Deals with the problems, new techniques, and other developments in the refuse removal industry, with an engineering mentality; overloaded with commercial advertising. (Monthly)

WATER, AIR AND SOIL POLLUTION. D. Reidel Publishing Co., Dordrecht, Holland.

A technical international journal on environmental pollution. (Quarterly)

WATER AND POLLUTION CONTROL. 1450 Don Mills Road, Don Mills, Ontario MEB 2X7 Canada

A Canadian business publication covering aspects of water sewage, industrial wastes, and air pollution. It is marketed especially for municipal officers, industrial officers , and engineers. (Monthly)

JOURNAL OF ENVIRONMENTAL HEALTH. National Environmental Health Association, 1600 Pennsylvania Street, Denver, CO 80203

Brief articles, reviews, and statistics on environmental health aimed at the environmental health worker in the field, such as health inspectors and sanitarians. (Quarterly)

JOURNAL OF ENVIRONMENTAL MANAGEMENT. Academic Press. 111 Fifth Avenue, New York, NY 10003

An interdisciplinary journal dealing with the application of ecological principles for sound environmental management. Excellent articles suggesting approaches to important problems that are a must for those interested in good land management. (Quarterly)

JOURNAL OF ENVIRONMENTAL QUALITY. 677 South Segoe Road, Madison, Wisconsin 53711.

Technical periodical dealing with certain aspects of natural and agricultural ecosystems. Multidisciplinary, containing original research as well as brief reviews and analyses of specific problems. (Quarterly)

JOURNAL OF ENVIRONMENTAL SYSTEMS Baywood Publishing Co., 43 Central Avenue, Farmingdale, NY 11735

Analysis and solution of problems relating to system-complexes that make up our environment. Special attention is given to problems dealing with the interface of societal supersystems. (Quarterly)

JOURNAL OF FORESTRY. Society of American Foresters, 1010 Sixteenth Street, NW, Washington, DC 20036

Journal for professional foresters containing short articles of both a technical and nontechnical nature on forest resource management. Also announcements of meetings and the affairs of the society. (Monthly)

MARINE POLLUTION BULLETIN. Macmillan Journals Ltd. Burnel Road, Basingstoke, Hants, England.

Deals with all aspects of deterioration and management of the ecosystems of lakes, estuaries, seas, and oceans. News briefs, comments on issues, reviews, research reports, and news of research programs are regular features. (Monthly)

MOTHER EARTH NEWS, INC. P. O. Box 70, Hendersonville, NC 28739.

A popular periodical with excellent articles on alternative energy systems, organic farming, and alternative life styles. (Bimonthly)

NATURAL RESOURCES JOURNAL. University of New Mexico, School of Law, Albuquerque, NM 87131

Technical reports on the legal and fiscal aspect aspects of ecological problems. (Quarterly)

OUR PUBLIC LANDS. U. S. Government Printing Office, Washington, DC 20402

The official publication of the U. S. Department of Interior, Bureau of Land Management. Articles featured are concerned with the use and conservation of water, fish, minerals, land, parks, wildlife, and recreational resources. Also included are items concerning Indian and territorial affairs. (Quarterly)

PEST CONTROL. Harvest Publishing Co., 9800 Detroit Avenue, Cleveland, Ohio 44102

This publication is directed at various aspects of pest control, especially urban and indistrial. Regular features include news items and reports on pertinent governmental affairs. (Monthly)

POLLUTION ENGINEERING. 1301 S. Grove Avenue, Barrington, IL 60010

This publication contains articles on total environmental control: air, water, noise, solid waste, etc. Regular features include a list of new books which have been reviewed and recommended by the editors as well as brochures, pamphlets and booklets, coverage of legislative trends, and a schedule of meetings. (Monthly)

WATER AND SEWAGE WORKS. 434 South Wabash, Chicago, IL 60605

An industrial- and engineering-oriented periodical that covers new developments and techniques in water and sewage management. Contains announcements of meetings and is loaded with commercial advertising. (Monthly)

WATER AND WASTES ENGINEERING. 666 Fifth Avenue, New York, NY 10019

Directed at municipal and industrial personnel. Coverage includes design, management, and maintenance of municipal and investor-owned water supplies and waste water systems. Also includes suggested books, new items, and manufacturer's literature. (Monthly)

WATER NEWSLETTER. Water Information Center, Inc., 44 Sintskink Drive East, Port Washington, Long Island, New York 11050

Desalination, irrigation, conservation of water, waste disposal, water pollution, water supplies and recycling are among the many topics covered. (Semimonthly)

WATER POLLUTION CONTROL. Institute of Water Pollution Control, Ledson House, 53 London Road, Maidstone, Kent, England.

Features articles on various aspects of water pollution control; technical management, financing, sewage treatment works, etc. (Bimonthly)

WATER RESEARCH. Peragamon Press Limited, Headington Hill Hall, Oxford OX3, OBW, England.

Original research papers concerning water quality management. (Monthly)

WATER RESOURCES RESEARCH. American Geophysical Union, 2100 Pennsylvania Avenue, N.W., Washington, DC 20036

This publication includes a combination of scientific contributions dealing with our water resources from the physical, social, and biological sciences. (Quarterly)

WATER RESOURCES BULLETIN. American Water and Resources Association, 206 East University, Urbana, IL 61801

Engineers, biologists, and social scientists as well may benefit from the interdisciplinary approach taken by this publication. Areas included are education, research, planning, operation, and maintenance of water resources. Also featured are book reviews, news items, and association events. (Bimonthly)

WATER SPECTRUM. Superintendent of Documents, Government Printing Office, Washington, DC 20402

Published by the Army Corps of Engineers, its concern with water pollution problems tends to be crisis-oriented with an emphasis on management by technological modification. Good for keeping abreast of what the Corps is doing or proposes to do to the environment. (Quarterly)

PERIODICALS THAT ARE GENERALLY CLASSIFIED AS CONSERVATION AND NATURE MAGAZINES THAT USUALLY INCLUDE A GREAT DEAL OF MATERIAL ON BOTH EXPLORING THE OUTDOORS AND THE PROBLEMS CONFRONTING OUR NATURAL SYSTEMS, OFTENTIMES INCLUDING A WEALTH OF ILLUSTRATED MATERIAL.

AMERICAN FORESTS. American Forestry Association, 919 17th Street, NW, Washington, DC 20006

The "voice" of the American Forestry Association that presents material directed at the non-expert, on how best to conserve and utilize forest resources. It has many illustrations and photos. It tends to serve as a countervoice to magazines such as the CONSERVATION NEWS, since it is business-oriented. Suitable for use by groups from high school up. (Monthly)

ANIMAL KINGDOM. New York Zoological Society, Bronx, New York, NY.

A Zoo News that includes popular reports on dwindling or endangered species. (Monthly)

AUDUBON MAGAZINE. National Audubon Society, 1130 Fifth Avenue, New York, N.Y. 10028

General magazine for high school level and up. (Monthly) CURIOUS NATURALIST is a leaflet issued by Audubon Magazine for junior high school students.

BIOLOGICAL CONSERVATION. Elsevier Publishing Co., Barking, Essex, England.

Organizational catalog of governmental and private agencies that deal with resource management. (Annual)

THE CONSERVATIONIST. New York State Conservation Department. State Campus, Albany, NY 12226

A state conservation magazine written for popular consumption that covers all phases of conservation and also has national appeal. Magnificant nature paintings are included. (Bimonthly)

DEFENDERS OF WILDLIFE NEWS. Defenders of Wildlife, 731 DuPont Circle Building, 1346 Connecticut Avenue, N.W., Washington, DC 20036

Includes factual material and proposed legislation regarding wildlife. (Quarterly)

INTERNATIONAL WILDLIFE. National Wildlife Federation, 1412 16th Street, Washington, DC 20036

This journal emphasizes the inter-dependence between man and nature and presents conservation news at an international level. (Bimonthly)

JOURNAL OF SOIL AND WATER CONSERVATION. 7515 N.W. Ankeny Road, Ankeny, Iowa.

Semi-popular periodical issued by the Soil Conservation Society of America; presents useful articles and film reviews for high school and adult groups. (Bimonthly)

JOURNAL OF WILDLIFE MANAGEMENT. The Wildlife Society, 3900 Wisconsin Avenue, N.W., Washington, DC 20016

Original papers dealing with wildlife management, as well as lists and reviews of recently published books in the field. (Quarterly)

LIVING WILDERNESS. Wilderness Society, 729 15th Street, N.W., Washington, DC 20005

A periodical presenting "wild area's" point of view with respect to land use and environmental preservation. (Quarterly)

NATIONAL PARKS MAGAZINE. National Parks Association, 1300 New Hampshire Avenue, N.W., Washington, DC 20036

Investigates current conservation issues and legislation. It also offers constructive criticism of private and government agencies but is not preoccupied with such matters. (Monthly)

NATIONAL WILDLIFE. 1412 16th Street, N.W. Washington, DC 20036.

This journal emphasizes the inter-dependence of man and nature presenting conservation news and legislation at state and national levels. (Bimonthly)

ORYX. Fauna Preservation Society, London, England.

Presents general articles on conservation and related biological topics and a worldwide survey of conservation news for the general public. (Quarterly)

PARKS AND RECREATION. 1601 North Kent Street, Arlington, VA 22209

A journal of park and recreation management and its place in the conservation movement. (Monthly)

RED DATA BOOKS. International Union for the Conservation of Nature, Morges, Switzerland.

The most important source of information on endangered species, listing endangered mammals and birds (Irregular)

SIERRA CLUB BULLETIN. 530 Bush Street, San Francisco, CA 94108

An excellent popular magazine concerned with preserving American's remaining wilderness. (Monthly)

SOIL CONSERVATION. Superintendent of Documents, Washington, DC 20402

A semi-popular periodical issed by the Soil Conservation Service of USDA that emphasizes wise use of land and water resources. (Monthly)

THE LIVING WILDERNESS. Wilderness Society, 729 15th Street, N.W., Washington, DC 20005

This magazine is concerned with scientific studies of the need to preserve wilderness, and the public support for such preservation. (Monthly)

PERIODICALS FROM OTHER FIELDS THAT INCLUDE A SIGNIFICANT AMOUNT OF MATERIAL ON THE ENVIRONMENT AND ITS PROBLEMS.

BIOSCIENCE. 3900 Wisconsin Avenue, Washington, DC 20016

Official publication of the American Institutes of Biological Science. It presents many articles on the biosocial aspects of environmental science. Many of the articles are of a general synthesizing nature and are therefore useful to educators or researchers in allied fields. (Monthly)

THE BULLETIN OF THE ATOMIC SCIENTISTS. 1020-24 East 58th Street, Chicago, IL 60637

A social activist publication that contains authoritative articles on many of the abuses of technology. Especially good with regard to energy problems. Includes book reviews, debates, and vital editorials. (Monthly except July & August)

THE CENTER MAGAZINE. Fund for the Republic, Inc. 2056 Eucalyptus Hill Road, Santa Barbara, CA 93103

The publication of the Center for the Study of Democratic Institutions. Publishes many articles of environmental concern with great emphasis on the political and social aspects. (Bimonthly)

DAEDALUS. American Academy of Arts and Sciences. 280 Newton Street, Brookline Station, Boston, MA 02146

Leading authorities from a variety of fields present scholarly articles on problems of world significance. Especially valuable for material on population and technology. (Quarterly)

THE FUTURIST. The World Future Society, P. O. Box 30369, Bethesda Branch, Washington, DC 20014.

Official publication of the WFS that acts as an impartial clearinghouse for a variety of alternative views of the world's future. A stimulating presentation of many environmentally relevant forecast trends and ideas concerning the future. (Bimonthly)

IMPACT OF SCIENCE ON SOCIETY. UNESCO, 317 East 34th Street, New York, NY 10016.

Present essays dealing with the social consequences of science and technology. (Quarterly)

NATURAL HISTORY. American Museum of Natural History, Central Park WEst at 79th Street, New York, NY 10024.

A general magazine on natural history with frequent articles on conservation. Excellent illustrative material. (Monthly)

NATURE. 711 National Press Building. Washington, DC 20004.

A weekly interdisciplinary journal that presents original research in all fields of science, as well as book reviews and news briefs. (Weekly)

NEW SCIENTIST. New Science Publications, 128 Long Acre, London, England WC2E 9QH.

Provides comprehensive coverage of scientific news. Ecology is a frequent topic. (Weekly)

SCIENCE. AAAS, 1515 Massachusetts Avenue, N.W., Washington, DC 20005.

The official publication of the AAAS that publishes articles, book reviews, technical notes, and editorial comments on all aspects of science. It includes much material on ecology and environmental problems of both a specific and general nature. Lists meetings and new books for ready reference. (Weekly)

SCIENCE NEWS. 1719 N. Street, N.W., Washington, DC 20036.

A brief news summary of the week's scientific developments that includes a substantial amount of material on environmental science. It has a regular subdivision entitled environmental sciences, plus earth sciences, medical sciences, ecology, and others. (Weekly)

TECHNOLOGY REVIEW. Massachusetts Institute of Technology. Room E-219-430, Cambridge, MA 02139.

A sophisticated publication that devotes more than half of its pages to environmentally related material. Especially strong with respect to science policy. (9times/year)

WORLD FUTURE SOCIETY BULLETIN. World Future Society. 4916 St. Elmo Avenue, Washington, DC 20014.

A publication of the World Future Society that includes scientific articles and in-depth book reviews or alternative approaches to the future. Includes sections on news, courses, conference, people, publications, books, games and professional activities. (Bimonthly)

The following organizations and government agencies have available a variety of brochures, booklets, and other publications related to energy.

##########

AMERICAN AUTOMOBILE ASSOCIATION
8111 Gate House Road
Falls Church, VA 22042

AMERICAN FOREST INSTITUTE
1619 Massachusetts Avenue, N.W.
Washington, DC 20036

AMERICAN PETROLEUM INSTITUTE
1801 K Street, N.W.
Washington, DC

CONSUMER INFORMATION CENTER (Federal Publications Clearinghouse)
Pueblo
Colorado 81009

COUNCIL ON ENVIRONMENTAL QUALITY
722 Jackson Place, N.W.
Washington, DC 20006

E U A SERVICE CORPORATION
P. O. Box 212
Lincoln, RI 02865

EDISON FUND
101 South Harrison Street
East Orange, NJ 07018

ENERGY CONSERVATION RESEARCH
9 Birch Road
Malvern, PA 19355

ENERGY RESEARCH & DEVELOPMENT ADMINISTRATION
Office of Public Affairs
Washington, DC 20545

ENVIRONMENTAL ACTION COALITION
156 Fifth Avenue
Suite 1130
New York, NY 10010

EXXON COMPANY, U. S. A.
P. O. Box 2180
Houston, TX 77001
R. J. Howe, Public Relations Manager

FEDERAL ENERGY ADMINISTRATION
Room 220, Old Post Office Building
Eleventh & Pennsylvania Avenue, N.W.
Washington, DC 20461

FEDERAL POWER COMMISSION
825 North Capitol Street, N.E.
Washington DC 20426

MINNESOTA STATE ENERGY AGENCY
FOK Building
Kellogg Blvd, & Robert Street
St. Paul, MN 55102

NARRAGANSETT ELECTRIC CO.
280 Melrose Street
Providence, RI 02907

NATIONAL COAL ASSOCIATION
Coal Building
1130 Seventeenth Street, N.W.
Washington, DC 20036

NATIONAL FOREST PRODUCTS ASSOCIATION
1619 Massachusetts Avenue, N.W.
Washington, DC 20036

NATIONAL SCIENCE TEACHERS ASSOCIATION
1742 Connecticut Avenue, N.W.
Washington, DC 20009

NEW ENGLAND POWER COMPANY
280 Melrose Street
Providence, RI 02901

NEW ENGLAND POWER SERVICE
20 Turnpike Road
Westboro, MA 01581

NUCLEAR REGULATORY COMMISSION
1717 H Street, N.W.
Washington, DC 20555

SHELL OIL COMPANY
P. O. Box 61609
Houston, TX 77208

STANDARD OIL COMPANY (Indiana)
Programs Section
Public and Government Affairs
P. O. Box 5910, MC 3705
Chicago, IL 60680

TENNESSEE VALLEY AUTHORITY
Fifteenth and H Streets, N.W.
Washington, DC 20444

THOMAS ALVA EDISON FOUNDATION
Cambridge Office Plaza, Suite 143
18280 West Ten Mile Road
Southfield, MI 48075

U. S. ENVIRONMENTAL PROTECTION AGENCY (Office of Public Affairs)
401 M Street, S.W.
Washington, DC 20460

U. S. NATIONAL COMMISSION OF THE WORLD ENERGY CONFERENCE
345 East 47th Street
New York, NY 10017

NATIONAL SOLAR HEATING AND COOLING INFORMATION CENTER
P. O. Box 1607
Rockville, MD 20850

Groups and Agencies in Rhode Island with Interest in Environmental/ Energy Education.

##########

AMERICAN LITTORAL SOCIETY FOR RHODE ISLAND
c/o Hern
Tuckertown Road
Wakefield, RI 02879

AQUIDNECK ISLAND ECOLOGY
P. O. Box 573
Newport, RI 02840

AUDUBON SOCIETY OF RHODE ISLAND
40 Bowen Street
Providence, RI 02903

COASTAL RESOURCES CENTER
University of Rhode Island
Narragansett Bay Campus
Narragansett, RI 02882

COASTAL RESOURCES MANAGEMENT COUNCIL
83 Park Street
Providence, RI 02903

CONCERNED CITIZENS OF RHODE ISLAND
P. O. Box 525
Charlestown, RI 02813

COOPERATIVE EXTENSION SERVICE
111 Woodward Hall
University of Rhode Island
Kingston, RI 02881

District Offices

Cooperative Extension Service
400 Wickenden Street
Providence, RI 02903

Eastern Rhode Island Extension Service
50 Washington Square
Newport, RI 02908

Southern Rhode Island Extension Service
70 Pierce Street
E. Greenwich, RI 02818

Northern Rhode Island Extension Service
15 Smith Avenue
Greenville, RI 02828

ECOLOGY ACTION FOR RHODE ISLAND
286 Thayer Street
Providence, RI 02906

GOVERNOR'S ENERGY OFFICE
80 Dean Street
Providence, RI 02903

ENVIRONMENTAL PROTECTION AGENCY
Water Quality Laboratory
Narragansett, RI 02882

Public Affairs Office
JFK Federal Building
Boston, MA 02203

LEAGUE OF WOMEN VOTERS
41 Seekonk Street
Providence, RI 02906

NORMAN BIRD SANCTUARY
Third Beach Road
Middletown, RI 02840

NATIONAL EDUCATION ASSOCIATION/RHODE ISLAND
Hennessy Avenue
N. Providence, RI 02911

OFFICE OF INFORMATION AND EDUCATION
Division of Administration
R. I. Department of Environmental Management
83 Park Street
Providence, RI 02903

PROGRAM DEVELOPMENT UNIT
R. I. Department of Education
22 Hayes Street
Providence, RI 02908

R. I. ASSOCIATION OF CONSERVATION COMMISSIONERS
Richard Poirier, President
Stillwater Road
Smithfield, RI 02917

R.I. COMMITTEE ON ENERGY
P. O. Box 653
Charlestown, RI 02813

RHODE ISLANDERS FOR SAFE POWER
P. O. Box 69
Wakefield, RI 02870

RHODE ISLAND FEDERATION OF GARDEN CLUBS
Mary Ellen Blount, President
118 Poppasquash Road
Bristol, RI 02809

RHODE ISLAND FEDERATION OF TEACHERS
171 Pawtucket Avenue
Pawtucket, RI 02860

RHODE ISLAND STATE CONSERVATION COMMITTEE
Administrative Officer
83 Park Street
Providence, RI 02903

RHODE ISLAND WATER RESOURCES BOARD
265 Melrose Street
Providence, RI 02907

SAVE THE BAY, INC.
655 Main Street
E. Greenwich, RI 02818

R. I. TUBERCULOSIS & RESPIRATORY DISEASE ASSOCIATION
187 Westminster Mall
Providence, RI 02903

SOLID WASTE MANAGEMENT CORPORATION
39 Pike Street
Providence, RI 02903

STATEWIDE PLANNING PROGRAM
R. I. Department of Administration
265 Melrose Street
Providence, RI 02907

U.S. SOIL CONSERVATION SERVICE
222 Quaker Lane
W. Warwick, RI 02893

UNIVERSITY OF RHODE ISLAND SEAGRANT PROGRAM
Marine Advisory Service
Narragansett Bay Campus
Narragansett, RI 02882

CONSULTANT, DRIVER EDUCATION
R.I. Department of Education
22 Hayes Street
Providence, RI 02908

AUTOMOBILE CLUB OF RHODE ISLAND
1035 Reservoir Avenue
Cranston, RI 02910

RHODE ISLAND DEPARTMENT OF EDUCATION

Bureau of Technical Assistance
DISSEMINATION SERVICES

ORDER FORM

PLEASE SEND THE FOLLOWING MICROFICHE:

ED_____	ED_____	ED_____
ED_____	ED_____	ED_____
ED_____	ED_____	ED_____
ED_____	ED_____	ED_____

PLEASE SEND THE FOLLOWING JOURNAL ARTICLES:

Journal Title	Date of Journal	Title of Article	Res. Guide Page No.

PLEASE SEND ADDITIONAL MATERIALS:

TITLE	Res. Guide Page. No.

SEND TO: NAME_____

ADDRESS_____

_____ ZIP_____

RETURN TO: DISSEMINATION UNIT, R. I. DEPARTMENT OF EDUCATION, 22 HAYES STREET, PROVIDENCE, RI 02908